THE BUILDER

INCORPORATING

"ARCHITECTURE" AND "THE BRITISH ARCHITECT"

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THE IMMEDIATE FUTURE

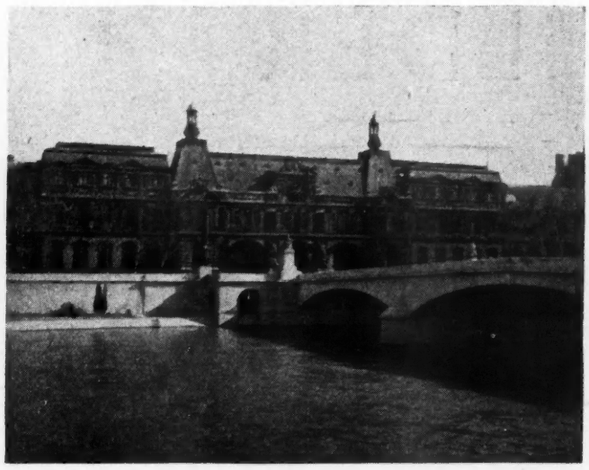
THE defeat of the French Army, after heroic fighting, brings the war literally to our own hearths and homes. This is not the moment to inquire into the reasons for the disasters which have overtaken the Allied arms. There will be a time for that hereafter. The immediate need is to press on with every conceivable preparation against the attack that may soon fall upon us, and in this work the Building Industry must play an indispensable part.

"I see great reason for intense vigilance and exertion," said the Prime Minister this week, "but none whatever for panic or despair." Vigilance and exertion will, we may be sure, be fully exercised in defensive measures to meet any emergency.

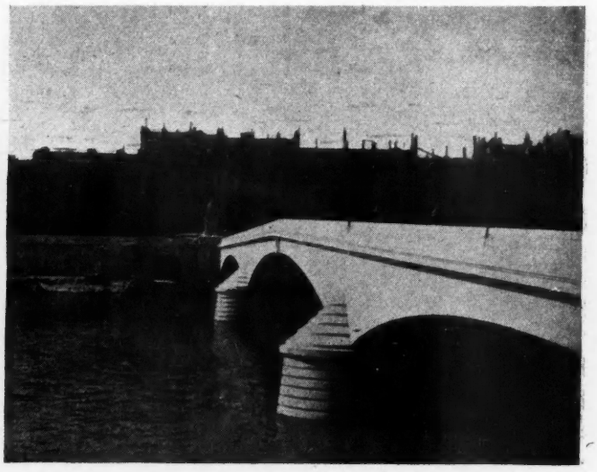
The needs are two—Military and Civil. The first task is to build a scheme of fortifications of great depth and strength around the whole Island. It must be thorough, and carefully as well as quickly implemented, and a large reserve of technical planning skill is available among architects and surveyors to be called upon if needed. Every conceivable kind of obstacle to the advance of the enemy, should he succeed in landing, must be quickly devised. Reinforced concrete fortresses must be built in strategic positions near vulnerable points—the modern equivalents of the Martello Towers built to resist Napoleon's threatened invasion. Inland across the open country and through the towns and villages must be more and more defences—strongholds, pillboxes, trenches, tank and plane traps. Every road from the coast must be blocked, every house suitable for defence turned into a fortress.

On the Civil side, more and more shelters must be built; evacuation accommodation erected. The industrial population must be preserved to produce the great quantities of arms, planes and ammunition that will be needed by the Navy, Army and Air Force to repel and assault the enemy. Existing factories must be enlarged, scores of new ones erected, to supply in overwhelming quantities the munitions of war. Nothing must be allowed to stand in the way of National Defence: obstructive officialism, where found, must go. Speed, Order, Efficiency must be the watchwords if the Island is to be made an impregnable fortress.

The concrete, the steel, the bricks, the mortar, the labour, are available in abundance. The Building Industry and its associated professions are ready.



THE BRIDGE FROM THE S.W., SHOWING PART OF THE GARDEN ON LOWER QUAI AND THE ARCHES OF THE LOUVRE, THROUGH WHICH THE TRAFFIC STREAM NOW PASSES STRAIGHT OVER THE BRIDGE.



THE BRIDGE AS SEEN FROM THE NORTH (LOUVRE) QUAI, LOOKING TOWARDS THE QUAI MALAQUAIS, ALONG WHICH THE TRAFFIC TUNNEL IS BEING CONSTRUCTED.

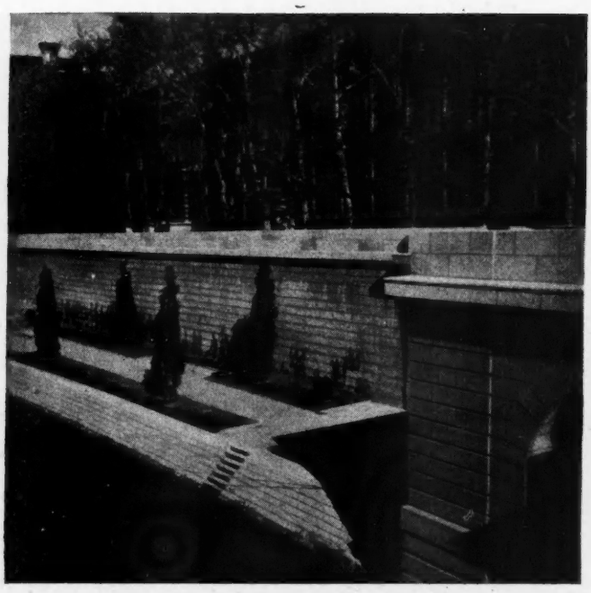
THE RECONSTRUCTION OF THE PONT DU CARROUSEL, PARIS.

Despite the war several works of some importance had been in progress in Paris. Perhaps the chief of these (writes Mrs. C. A. Harrison) is the reconstruction of the *Pont du Carrousel* and the construction of a traffic tunnel at its southern end.

Strangely enough for a planned city such as Paris, this bridge was not exactly on the axis of the great arches in the Louvre through which the north-south traffic stream approached it. By widening the bridge considerably to the west and slightly to the east, this fault in planning has been corrected and traffic no longer has to swing suddenly left and then right as it comes out to cross the Seine.

The construction of a traffic tunnel along the Quai Malaquais and under the southern shoulder of the new bridge will enable through traffic going west (down stream) not to be held up by cross traffic over the bridge and vice versa.

The new bridge is much on the lines of the old one (1834 by Polonceau) and even the mediocre statues at the four corners are being replaced. A new feature, however, is the delightful laying out of a formal garden on the lower quai at the north end of the bridge. One wonders why this has never been attempted before.



THE NEW FORMAL GARDEN ON THE LOWER QUAI DU LOUVRE. ON THE EXTREME LEFT CAN BE SEEN THE LOUVRE.

VIEW OF THE QUAI MALAQUAIS. IN THE CENTRE CAN BE SEEN THE COMMENCEMENT OF THE TRAFFIC TUNNEL.

NOTES AND NEWS

Stanley Hall.

THE death of Mr. E. Stanley Hall, which took place on Sunday, robs the R.I.B.A. of a President whose sterling, patient leadership has been of great service to the profession in the past months of war and deprives equally his fellow-members of a personality in which strength of mind and equability of temper were evenly balanced. He is the second only of the R.I.B.A. Presidents to die "in harness"—the other being George Edmund Street in 1881.

Some record of Mr. Hall's professional life, together with a tribute from the Hon. Secretary of the R.I.B.A., appears on page 723, but there may here be recalled a singular tribute to the geniality which characterised him that was paid on the occasion of the presentation of the R.I.B.A. Medal in November, 1937, when the representative of the firm of builders which erected the winning building (the Nurses' House, Hospital for Sick Children) revealed that Mr. Hall was referred to by the workmen on the job as "Stanley," or—if he were about—as "Mr. Stanley." As was said at the time: "It was not a mark of levity but an expression of the high personal regard and esteem in which the workmen held Mr. Stanley Hall."

To Mrs. Hall and to his partners the sympathy of the whole building industry will be extended.

Auxiliary Fire Service and Architects.

THE R.I.B.A. makes the following announcement: It has been proved that it is of real value to every fire squad to have at least one member who has a knowledge of building. Every member of the R.I.B.A. who is willing to help in this way should at once communicate with the local Chief Officer of the Fire Brigade and offer his services. This action will have the cordial approval of the Ministry of Home Security.

"Protect Your Homes" Exhibition.

A SURVEY of air raid precautions in various aspects is provided by a "Protect Your Homes" Exhibition at the Housing Centre, which was opened on Wednesday by Mr. Harold Nicolson, M.P., Parliamentary Secretary, Ministry of Information. The Countess of Limerick presided. The exhibition shows the work of the Fighter Command, the Observer Corps, the Balloon Barrage, the Auxiliary Fire Service, the First-Aid Posts, and the Report Centres; while photographs and captions cover the black-out, the stirrup-pump, the cleansing stations, gas-masks, evacuation, and public shelters.

Mrs. Madge Waller, honorary director of publicity at the Housing centre, has organised the exhibition with the help of leading industrialists engaged in A.R.P. work, particularly that of Dr. Bernard Friedman, who has rendered notable service to the science of decontamination. The construction and design of the exhibition screens is the work of a young Canadian, Mr. F. H. Layfield, with direction from Miss Elizabeth E. Halton, A.T.P.I., of the executive of the Garden Cities and Town Planning Association, and Miss J. Adburgham, L.R.I.B.A., A.M.T.P.I. The exhibition, to which admission is free, will continue until Saturday, July 13. Arrangements may be made with the Housing Centre for the reception of organised parties from A.R.P. depots, A.R.P. committees, schools, institutions, local authorities, etc. After it closes in London the Exhibition will tour the country, showing at Glasgow, Liverpool, Manchester, and other towns of importance.

An Honorary Fellowship, St. Catherine's.

THE election is announced into an Honorary Fellowship at St. Catherine's College, Cambridge, of Mr. Albert Edward Richardson, A.R.A., F.S.A., F.R.I.B.A., Professor of Architecture in the University of London.

Air Raid Protection Institute: New President.

MR. A. KIRKWOOD DODDS, M.C., L.R.I.B.A., M.I.Struct.E., F.A.R.P.I., architect and engineer, has been elected to succeed Mr. Oliver Simmonds, M.A., M.P., as President of the Air Raid Protection Institute, to take office on October 1.

Mr. Frank Pick to Visit Ports.

THE Minister of Transport has arranged for Mr. Frank Pick, lately Vice-Chairman of the London Passenger Transport Board, to visit certain ports in the United Kingdom and to report to him on the organisation that has been set up to secure the speedy discharge and clearance of goods, so as to ensure that any exceptional demands likely to be made on the ports will be met. Mr. Pick began his series of visits on June 17.

Timber Control: Appointment of Board.

THE Minister of Supply has appointed a Timber Control Board which, subject to the Minister, will be responsible for all questions relating to timber supplies and production. The Chairman of the Board is Mr. George Dallas, J.P., and the other members are Major A. I. Harris, the Timber Controller, and Sir Roy Robinson, Chairman of the Forestry Commission. A representative of the Mines Department will be added for the consideration of any questions relating to mining timber. The Secretary of the Board is Mr. R. Meiggs, Ministry of Supply, Adelphi, London, W.C.2.

Metropolitan Water Board's Chairman.

AT the first meeting of the newly constituted Metropolitan Water Board, Mr. Henry Berry was elected by 33 votes to 30. Mr. Henry Berry is vice-chairman of the London County Council. He was largely responsible, as chairman of an advisory committee, for the revision of the codification of the London Building Acts.

IN 1915

EXTRACTS FROM *The Builder*, JUNE 18.

"THOUGH it may be long before the war is over, we have confidence enough to believe it can only have one outcome. . . . Now that the issue has been forced, peace can come only through the loss by Germany of much that has made her in the past the most powerful single State in Europe. . . ."

* * *

"WE regret to announce the death on June 9, at his residence, No. 6, Stratton-street, Piccadilly, W., of Mr. John Macvicar Anderson, F.R.S.E. . . . President of the Royal Institute of British Architects, 1891-4."

REGISTRATION

MEMBERS of the R.I.B.A. and of the Allied Societies are aware that after August 1, 1940, no one will be legally permitted to use the title "architect" unless his or her name has been entered on the Statutory Register maintained by the Architects Registration Council of the United Kingdom. The Council of the R.I.B.A. have decided that it was necessary to clear up any doubts that might exist as to the precise meaning of the Act. They have therefore taken counsel's opinion on three questions. The questions and counsel's answers to them are as follows:—

1. *If a member of the R.I.B.A. has not applied for registration by August 1, will he be legally entitled to use the title "Chartered Architect" (the title which was conferred upon members of the R.I.B.A. by the Supplemental Charter of* 1925)?

In my opinion—no. The provisions of the Act of Parliament are supreme and must prevail. The use of the title in the circumstances stipulated would be a clear infringement of sec. 1 of the Architects Registration Act, 1938.

2. *Will he be legally entitled to style himself a "Fellow (or Associate or Licentiate) of the Royal Institute of British Architects"?*

In my opinion—no. The same reasoning applies as under (1). It is immaterial that in the Act of 1938 the word "Architect" is in the singular, for by sec. 1 (1) (*b*) of the Interpretation Act, 1889, "words in the singular shall include the plural, and words in the plural shall include the singular."

3. *Will he be entitled to use the affix "F.R.I.B.A.," "A.R.I.B.A." or "L.R.I.B.A."?*

In my opinion—no. The letters or initials have no significance or meaning whatsoever save as denoting the words for which they stand. The initials "F.R.I.B.A." are only used because they have a well-known meaning; the initials are used as a short or shorthand method of denoting the style or title of a Fellow of the Royal Institute of British Architects; that style or title is one "containing the word 'Architect.'"

I have no hesitation in advising that an architect who uses the letters "F.R.I.B.A." after his name in connection with his professional dealings is practising or carrying on business under a name, style or title containing the word "Architect."

The R.I.B.A. emphasise that every member who has not already applied for registration is therefore urged for the last time to send in his application to the Registrar, the A.R.C.U.K., 68, Portland-place, W.1, without further delay.

COMING EVENTS

Friday-Sunday. June 21-23. — Garden Cities and Town Planning Association. Conference for the purpose of discussing the Report of the Royal Commission on the Geographical Distribution of the Industrial Population. University College, Oxford.

Friday, June 28.— Architects Registration Council. Quarterly Meeting.

Friday-Wednesday, June 21-July 17. — L.C.C. Central School of Arts and Crafts. Annual School Exhibition entitled "Design's Contribution to Export and Industry." At Southampton-row, W.C.1. 10 a.m.—8 p.m.

Thursday, July 4.—Plumbing Trades National Apprenticeship Council. At 81, Gower-street, W.C.1. 2.15 p.m.

Wednesday, July 10.—Housing Centre. Annual General Meeting. 5 p.m.

Friday, July 12.—Institute of Sewage Purification. Annual Summer Conference. At Leicester.

Thursday, July 18.—Architecture Club. Supper Discussion on "How Shall We Plan Our Buildings for Life After the War: In the Country?" Charing Cross Hotel. 7.45 p.m.

WAR-TIME BUILDING PRACTICE

By R. Cotterell Butler, A.R.I.B.A.

21.—SOCIAL SERVICE UNITS FOR EMERGENCY COMMUNITIES.

8.—A HYGIENE CENTRE FOR RECEPTION AREAS.—(Continued)

THE need for, and general requirements of, a simple service unit for reception areas which would provide facilities for evacuee mothers to wash and bath their children and themselves, and launder their clothes, were outlined last week. The following notes and general schematic drawings are intended to form a guide from which suitable practicable schemes may be easily evolved, economic aspects investigated, and detailed estimates of costs prepared.

GENERAL CONSTRUCTION.*

From the detailed plan, and typical cross section illustrated, it may be seen that the structure has been based upon a standardised three-dimensional grid. This grid operates in practice as a number of structural supports spaced at approximately 7 ft. centre to centre on a horizontal plane, and 10 ft. on a vertical plane, with horizontal members sub-dividing the vertical units at 3 ft. and 7 ft.

Thus, where complete prefabrication is to be adopted, a minimum variety of standardised elements is required.

Whether prefabrication is adopted or not, the use of a standardised arrangement of constructional elements is desirable. Even where the structure is to be erected solely *in situ* from small building elements, both supervision and the general technique of construction are simplified, with a corresponding increase in efficiency.

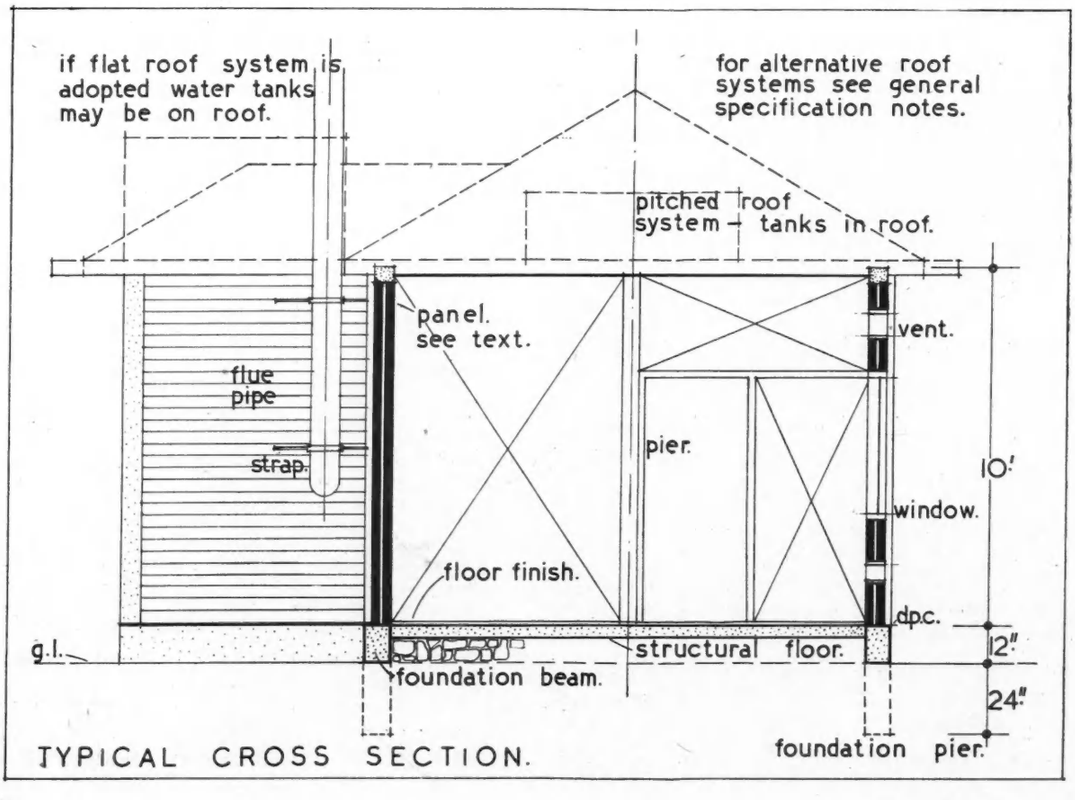
* Reference should be made to general notes on emergency construction in the following articles on War-Time Building Practice already published :—
No. 3.—Nov. 10. Structural requirements (Billeting accommodation).
No. 5.—Dec. 8. Mass construction for emergency building.
No. 6.—Dec. 15. Preformed unit and *in situ* constructional systems.
No. 7.—Jan. 12. Practical detailing.
No. 8.—Feb. 9. } Roof construction.
No. 9.—Feb. 16. }
No. 10.—Feb. 23. }
No. 18.—May 24. Substitutes for timber and metal for non-structural building components.

The problem of arranging for the economic erection of small service units widely distributed geographically, naturally differs from that of carrying out extensive building on one site—such as is the case where a whole camp of considerable size is to be erected. Unless adequate supplies of material suitable for prefabrication are easily available, and the transport facilities necessary are an economic possibility, it will often be desirable to carry out the erection of such isolated schemes by local labour, using local materials. In many cases, however, combined systems will be advantageous. Thus, for instance, the structure may well consist of built *in situ* piers of brickwork, with prefabricated panel units as in-filling, or alternatively preformed reinforced concrete structural members, with *in situ* constructed panels.

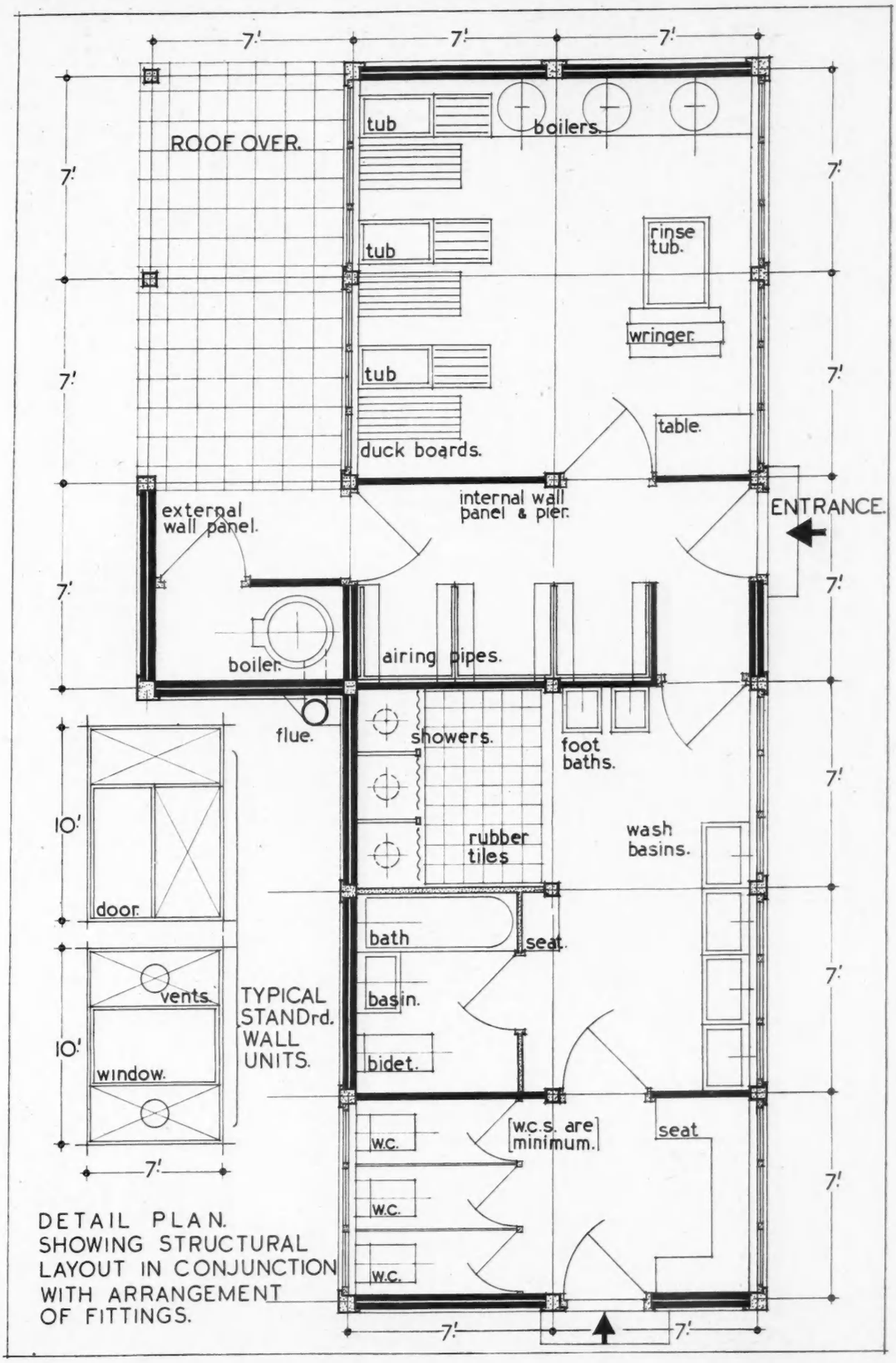
Extensive systemised site-mass-production is, of course, impossible since the size of project would not warrant the cost of the installation of the necessary plant, or its transport from place to place. Equally, urgency makes it essential for work to be carried out simultaneously in many localities, and the cost of special site production equipment for every scheme would be quite prohibitive.

OUTLINE SPECIFICATION OF SCHEME ILLUSTRATED.

The following notes are intended as a general guide to the scheme illustrated, and not necessarily recommendations for materials and finishes for any specified instance. For practicability the actual materials or system employed must be only decided upon after carefully examining both the conditions peculiar to the location of the unit and the immediate position with regard to supplies.



TYPICAL CROSS SECTION.



FOUNDATIONS.—Lightly reinforced brickwork or reinforced concrete foundation beam at ground level, resting on foundation pads of brickwork, or *in situ* concrete at 7 ft. centres.

FLOORS.—Light concrete over site on consolidated earth or hardcore, with waterproof membrane, and screed or tile finish.

WALL PIERS.—*In situ* brickwork, or preformed reinforced concrete piers, acting as structural supports of roof, and as jointing elements to wall panels when these latter are prefabricated.

WALL PANELS.—*In situ* formed double brick-on-edge, and cavity, or double brick-on-edge and waterproof membrane, or flat brick and partition block, and cavity or membrane. *In situ* formed preformed hollow concrete block or solid concrete block and light concrete inner skin and cavity. Prefabricated walling units of

lightweight, vibrated, or pre-stressed reinforced concretes. Painted or slurry finishes, no plastering.

ROOF.—Asbestos cement sheeting on preformed concrete or tubular asbestos cement supports carried on reinforced concrete beams supported by wall piers. Flat roof of preformed light concrete elements, hollow tile elements, and screed or membrane finish.

WINDOWS.—Sheet glass set in preformed concrete frames, or glass bricks or lenses built-up in panel openings. Ventilation provided independent of lighting elements, by special opening units which may be glazed or solid.

DOOR FRAMES.—Light preformed concrete frames detailed to tie with form of wall panel employed.

SUMMARY OF TYPICAL FITTINGS AND EQUIPMENT.

LAUNDRY.—THREE WASH TUBS, 30 in. by 18 in. by 10 in. Earthenware on concrete supports. Scrubbing board, asbestos cement or vibrated concrete. THREE IRONING BOARDS, 4 ft. 6 in. by 18 in., asbestos cement or composition board on light metal or timber framing, hinged to back of tub. Ribbed concrete duckboards should be provided. THREE CLOTHES BOILERS (10 gallons), 18 in. diam., gas fired or electric, may be set in brickwork, or concrete framing. Should have small draining boards at the side of each. ONE RINSING TUB, 3 ft. by 2 ft. 3 in., may be built-up in concrete or brickwork, with tile or other impervious lining. ONE COMBINATION MANGLE AND WRINGER, 3 ft. by 1 ft., 9 in. Should have either dual purpose composition rollers or removable rollers. ONE PILING TABLE, 3 ft. 3 in. by 2 ft., asbestos cement or concreteslab built to walls. Clothes baskets, pails.

BATHROOM.—FOUR WASHING AND BATHING, 1 ft. 9 in. by 2 ft. 3 in. Should be set low so that children may be bathed by mothers. THREE SHOWER UNITS, 2 ft. by 2 ft. Vibrated concrete or asbestos cement partitions. Non-slip tile floors. TWO FOOT BATHS, 1 ft. 6 in. by 1 ft. 3 in. Low level type. ONE BATHROOM SET, bath, lavatory basin, bidet. Cubicle to bathroom built up of partition block, vibrated concrete, or asbestos cement. SEATS. Low stool type.

AIRING ROOM.—Four sets of pipe run to provide heat. Airing racks of light concrete frame component parts grouted together.

LAVATORY.—W.C.'s should be suitable height for children. Partitions may be of asbestos cement or vibrated concrete.

DRYING GROUND.—Clothes line posts may be of reinforced concrete permanently fixed in position. Instead of using props, lines should be adjustable for tension. Lines for hanging clothes should be provided under roof of covered way for drying in bad weather, or storing linen during rain.

LOBBY.—Seats in lobby may be of concrete or brickwork with cork tile or similar tops.

HOT WATER SYSTEM.—Simple gravity-fed system should be used, boiler will probably be of solid fuel type, may be arranged to burn wood fuel when necessary. All feed pipes should be as short as possible, these may be of minimum permissible gauge materials.

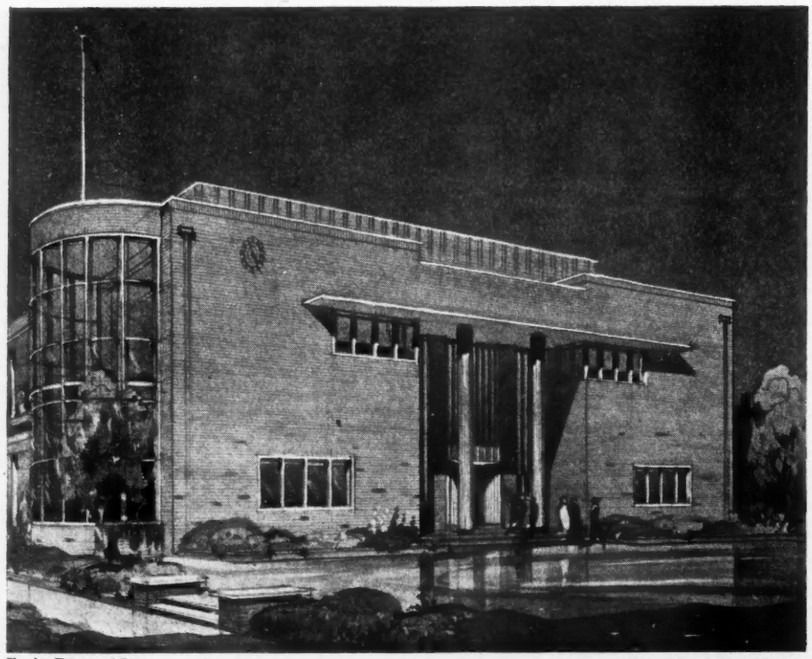
DRAINAGE.—Drainage costs may be reduced by using floor channels to collect water from lavatory basin, wash tubs, showers, etc.

(To be continued.)

Subjects previously dealt with in this series are :—

- **"The Field of Activity," October 13.**
- **"Billeting Accommodation," November 3, 10, 17.**
- **"Development of Materials and Constructional Systems as Substitutes for Timber," December 8 and 15 and January 12.**
- **"Roof Construction for Emergency Building Purposes," February 9, 16 and 23.**
- **"Black-Out : Current Technical Considerations." I.—March 8. II.—March 15.**
- **"Social Service Units for Emergency Communities," March 29 April 12, 19, 26 May 17, 31 June 14.**
- **"Substitutes for Timber and Metal for Non-Structural Building Components," May 24.**

Copies of these issues may be obtained from the Publisher.



F. A. Evans, *delt.* R.A. EXHIBITION, 1940.

BRITANNIC HOUSE CLUB HOUSE. Built at Lower Sydenham, the clubhouse contains four squash courts, three badminton courts, three lounges, smoking-room, billiards room, and table-tennis room, besides changing accommodation, kitchens, etc. Bedford grey bricks have been used. The architects are MESSRS. J. M. WILSON AND H. C. MASON, A. & F.R.I.B.A.

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OBITUARY

MR. E. STANLEY HALL

We regret to announce the death, following an illness of some months' duration, of Mr. E. Stanley Hall, M.A., President of the Royal Institute of British Architects. Mr. Hall was elected to follow Mr. H. S. Goodhart-Rendel last June. He was 59. Mr. W. H. Ansell, F.R.I.B.A., Hon. Secretary R.I.B.A., has contributed the following personal tribute:—

The news of the death of Stanley Hall came as a shock to all who knew him, and particularly to those who, like myself, have been closely associated with him through one of the most difficult periods of the Institute's existence.

He was for some years a quite obvious President of the R.I.B.A., and when at length the office came to him he welcomed it, not for any personal *kudos* it might bring, but for the opportunities it would give for the exercise of those kindly helpful qualities which were the very core of his nature.

The outbreak of war at the beginning of his Presidential year meant not only the annulment of many pleasant functions, which ordinarily temper the strain of office, but also a vast increase of difficult and strenuous work on behalf of the profession generally. Stanley Hall, without hesitation, placed his time at the disposal of the Institute, and in season and out of season worked, without regard for his own health or comfort, for the good of the members.

He inaugurated the correspondence in *The Times* on the right use of the Building Industry in the nation's war effort, and the reports of the Select Committee on National Expenditure prove how much would have been saved and how much more would have been accomplished had his advice been taken. He would have rejoiced at the different attitude of mind now becoming obvious in certain official and Departmental circles.

His war work for the R.I.B.A. members, unappreciated, one fears, by many for whom it was undertaken, is so recent and was to him so absorbing, that it tends to overshadow the long period of pre-war usefulness which made him an indispensable member of the Institute's Councils and Committees. He possessed a stiffness of fibre and a power of comprehending detail, which, allied to the innate kindliness I have mentioned, made him an ideal negotiator on behalf of the profession.

Of his own professional work others will be speaking, but I had an interesting insight into his methods of working a year or two ago. As advisory architect to a Trust formed for the purpose of building and equipping convalescent homes, I had to work with Stanley Hall, who designed and built a very specialised Home for the Trust. His working drawings were beautifully prepared, infused with knowledge, models indeed of what such drawings should be.

His Presidential term, measured not in length of time, but in value of work done, will be a notable one in the history of the R.I.B.A.

Born in 1881, Edwin Stanley Hall joined his father, the late Edwin T. Hall, after coming down from Oxford. Together they carried out much work, including Liberty's buildings in Regent- and Great Marlborough-streets; alterations to the Ashmolean Museum; additions to Dulwich Picture Gallery; churches at Copnor and Guildford; and a large volume of domestic work both new and restorative.

Some years ago he was joined in partnership by Messrs. J. Murray Easton and Howard Robertson, and much important work came from this collaboration, including Queen Charlotte's Hospital, Shepherd's Bush; the Portman Day Nursery; the Maternity and Child Welfare Centre, Finsbury; the offices of the *Practitioner*, Bentinck-street; a swimming pool and other buildings at Bournville; further extensions to the Ashmolean Museum, Oxford; buildings for Caius College, Cambridge; and buildings for the Oxford University Press. An authority on the design of hospitals, it was fitting that the Nurses' House which he designed for the Hospital for Sick Children, Great Ormond-street, should have gained the R.I.B.A. London Architecture Medal for 1936, the credit for which, as his partners have stated, was his alone. They (Messrs. Easton and Robertson) had gained the Medal ten years earlier with their Royal Horticultural Hall and the second award placed the firm—with that of Sir John Burnet, Tait and Lorne—in the proud position of having gained this Medal on two separate occasions.

THE LATE MR. STANLEY HALL.

Stanley Hall was consulting architect to the King Edward Sanatorium, Midhurst, and the King Edward VII Hospital, Cardiff.

The greater part of his professional life was spent in the service of the R.I.B.A., to which he was elected as an Associate in 1911, becoming Fellow in 1919 and President last autumn. He first was elected to the Council in 1913 and was Hon. Secretary in 1925-28, and Vice-President in 1928-1930 and again in 1935-37. He had for long also been a member of the A.A., having served in 1923 as President. He was representative in the United Kingdom of the Royal Architectural Institute of Canada. Only a fortnight ago he was appointed a member of the new Compensation Board for War Damage to Property.

The funeral took place at Headley Church, Surrey, on June 19. A Memorial Service will be held at All Souls' Church, Langham-place, W., on Tuesday, June 25, at 12 noon.

Mr. John A. Pearson.

The death is announced of Mr. John A. Pearson, F.R.I.B.A., the *doyen* of Canadian architects. A member of the firm of Darling, Pearson and Cleveland, of Toronto, he was responsible for many important public buildings in Ottawa and elsewhere. When, in 1916, the Ottawa Parliament Buildings, designed in 1867 by Fuller and Jones, were burnt down, Pearson was called in by the Government as architect of the new building, working in collaboration with J. L. Marchand. Later these architects were responsible for what is known as the "Peace Tower." Among other works executed by Pearson were a large part of the University of Toronto and the Sun Life Insurance buildings in Toronto and Montreal. Pearson had been the recognised head of the profession in the Dominion since the death of the senior partner of the firm, Frank Darling, who in 1915 was awarded the Royal Gold Medal of the R.I.B.A.

Pearson, who was a native of Derbyshire, began life as a stonemason in Liverpool, and spent over 50 of his 72 years in Canada. He was an alumnus of Wesley College, Cambridge, U.S.A.

Mr. W. H. Romaine-Walker.

Mr. F. R. Jelley sends us the following tribute:—

It is worthy of remark that even in these grim and hectic times the passing of William Henry Romaine-Walker has not remained unrecorded by the architectural Press of his own land. For Romaine-Walker belonged to those spacious Edwardian days before country mansions had been transformed into guest houses or schools or bottle-clubs and the baron and squire and knight of the shire were still in residence.

In quiet and unobtrusive fashion he left an indelible mark on the traditional domestic architecture of this country. Indeed, his work on many of the stateliest homes of England was effected with such skill and dexterity that future generations may well wonder which were the original buildings and which were Walker's.

Those members of our profession who passed through his office in the great days before the World War of 1914 and are still alive will, I am certain, join with me in wishing to pay this small tribute to his influence.

Romaine-Walker abhorred ostentatiousness and vulgarity, whether in speech, dress, behaviour, architecture or anything else. In 1909, when I entered his office in Old Bond-st., there was a Dickensian atmosphere of old-world courtesy about the place, as though the spirit of the Brothers Cheeryble hovered around those ancient rooms.

Everybody called everybody else "Mr.," and light-hearted young fellows (such as myself) were treated, not as mere minions, but as colleagues. In those remote days the art of penmanship still persisted with the art of draughtsmanship. Letters were still written by hand in dignified and courtly language (R.-W. himself always wielded a goose-quill pen), and correspondence had not then become contaminated by use of the typewriter and "business English." It is true that the telephone was installed, but the number was omitted from the Directory in case its insertion there might be regarded as some subtle form of advertisement.

Romaine-Walker planned and thought in the grand manner. If he ever made an estimate at all (which I doubt), it was probably given in round figures of guineas. He remained remote from the niggling and haggling of our modern commercial age, and his best work is to be found in the wide open spaces of our English countryside, where there are few restrictions on complete freedom in honest building and adjoining owners' surveyors do not lie in wait to squabble about party walls or infringements of light and air.

I am not skilled in the preparation of obituary notices or epitaphs, and to those of the older generation of architects who never met him, and those of the younger generation who have never heard of him, it must suffice if I quote one of the best of his innumerable epigrams.

"When I enter a building designed in the so-called modern manner," said he, "I always take off my hat. Not out of respect for the building, but out of respect for my hat!"

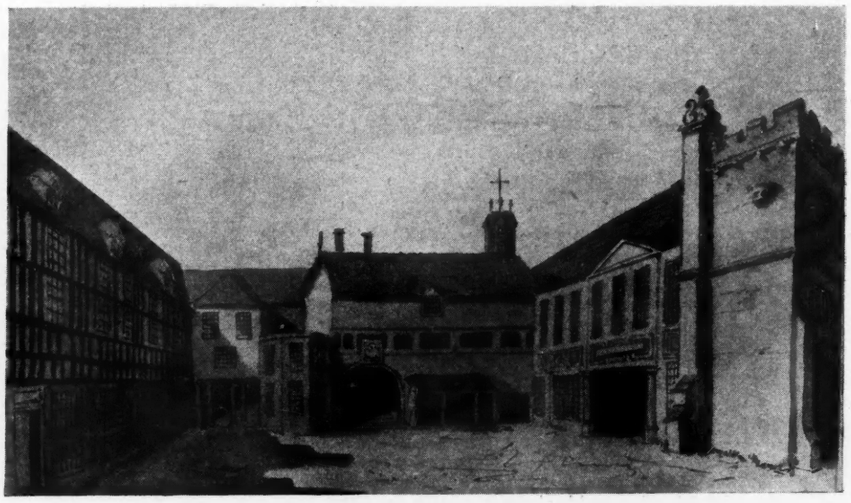
Sir Ian MacAlister's Bereavement.

The death, on active service, is announced of Flying Officer John Edmund Seaton MacAlister, eldest son of Sir Ian MacAlister and Lady MacAlister, of Hampstead. Born in 1912, he was educated at St. Paul's and at Merton College, Oxford, where he was an Exhibitioner in Modern History. After some years' service in the R.A.F. Reserve, he obtained his commission in the R.A.F. at the beginning of the war. He obtained a Half-Blue at Oxford for swimming and water-polo.

Every member of the R.I.B.A., and many beside, will wish, we know, to assure the Secretary of the R.I.B.A. and Lady MacAlister of their heartfelt sympathy.

THE SHIREHALL AND COUNTY BUILDINGS, SHREWSBURY

In a town of the antiquity and character of Shrewsbury, it is a matter for little surprise that from early days the seat of local government has been housed in a practically unchanged position in the centre of the town. Before 1783 there were no buildings belonging to the county, which appears to have conducted its business in the Booth Hall or Guildhall belonging to the town, and these buildings extended over what is now the present square and on part of the site occupied by the present Guildhall. These old buildings—a view of which is given on this page—were demolished in 1782-5, following a protest by Mr. Justice Hotham, who, it is recorded, "was so outraged at their dilapidated and antiquated condition that he imposed a fine of £2,000 on the county for not providing a proper place in which to hold an assize court, and threatened to move the assize unless adequate accommodation was provided for H.M. Judges." As a result of this a new shirehall was erected, by agreement between the county and the town, which stood until 1833, when Thomas Telford (who at one time was Surveyor to the County of Salop) reported that the oak piles on which the building stood were decayed, having been driven into the site of a pool at which, in Norman times, cattle had been watered.



SHREWSBURY GUILDHALL, GREEN ROOM AND EXCHEQUER. (Demolished 1782-5.)

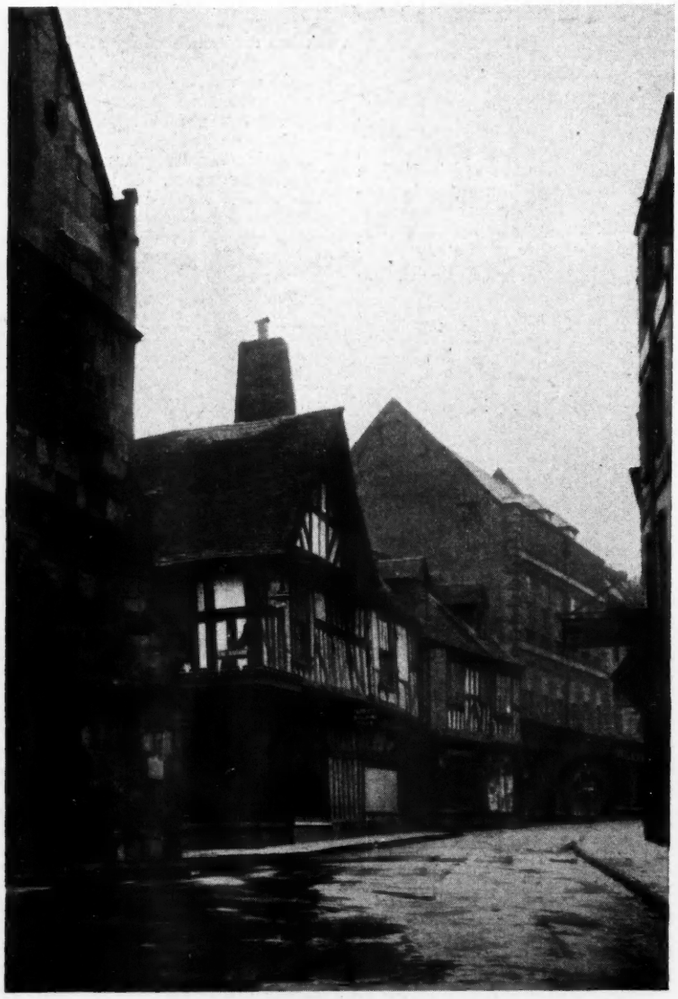
Plans for a new three-storeyed building were prepared by Sir Robert Smirke, who guaranteed a sufficient foundation on the old site by taking out the whole of the soil and replacing it with concrete. At the same time the building was set back, which gave another 240 square yards of land to the Square and High-street. The building, which cost £16,670, was opened in 1837, and lasted until 1880, when it was burnt out. The exterior walls were little affected, however, and the present building (designed by Mr. T. M. Lockwood, of Chester) incorporates Smirke's façade, though the building was extended at the rear. Further additions were made in 1906 to plans by the County Surveyor.

With the increase of public business, however, differences between the County Council and the Shrewsbury Corporation arose as to respective rights of user. These were settled and disposed of by the Salop County Council (Shirehall and Guildhall) Act, 1915, which, *inter alia*, provided for the payment by the County Council of £12,500 to the Corporation towards the provision by them of municipal offices.

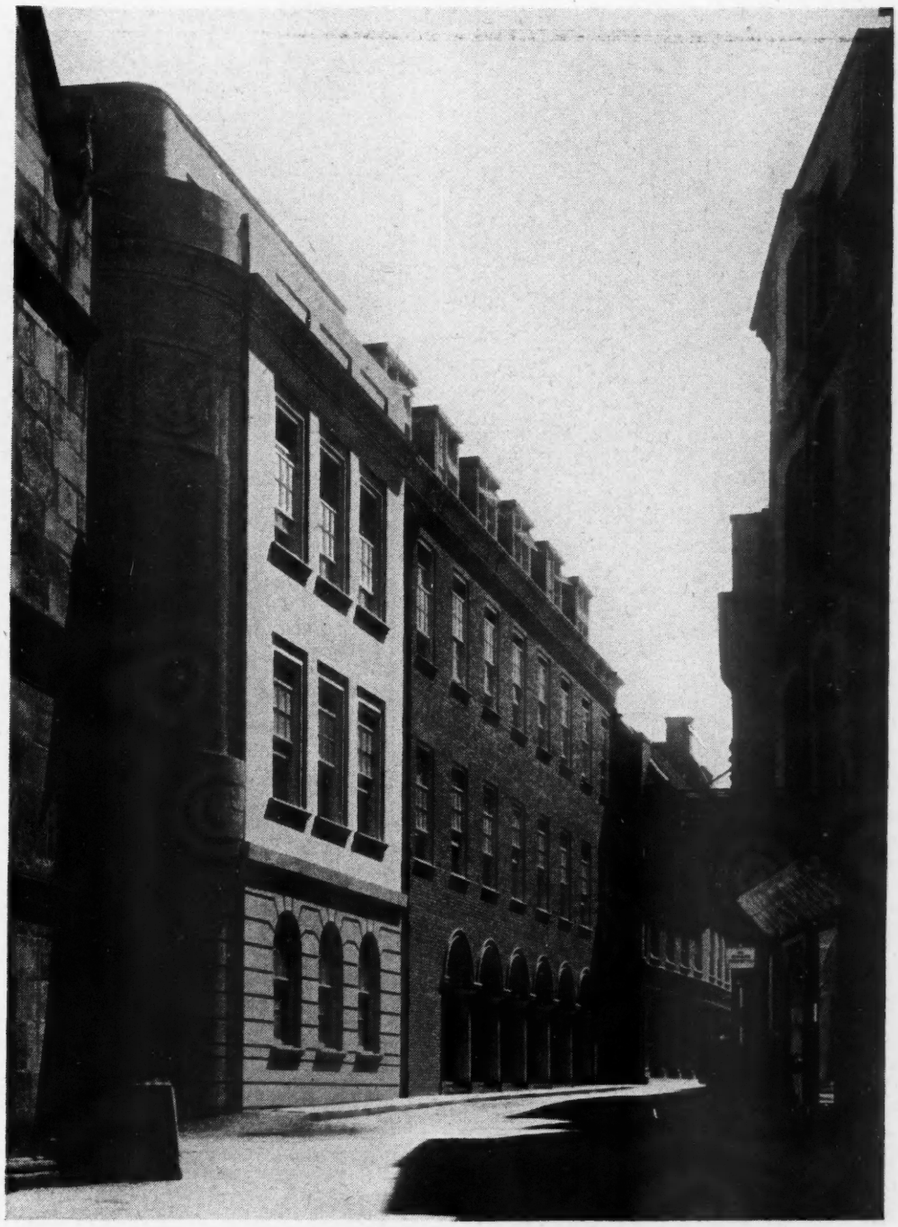
After the preparation of several abortive schemes, in 1936 plans for the main county offices extension scheme (on a site acquired by the Council in the years 1930-1931) were proceeded with. This included the demolition of an old half-timbered building known as Lloyds Mansion (shown in a photograph on this page), and the complete rebuilding of the corner between the Square and Princess-street, with the construction of a suite of county offices over a shopping arcade leading to the rebuilt centre block in Princess-street which had been undertaken in 1934. This work was completed at the end of last year, and opened by the Rt. Hon. the Earl of Powis on February 3 last.

The complete scheme—which has been planned by Mr. A. G. Chant, F.R.I.B.A., County Architect—will centralise all Departments with the exception of the County Police, the Public Health Department, and the County Library. Mr. Chant's work is now illustrated.

It may be stated that the County Council had handed over Lloyds Mansion to the Shropshire Horticultural Society, which had in mind the possibility of re-erecting this old building on the approach fronting Castle Gates immediately outside Shrewsbury Castle. As, however, the subsequent demolition of other property on the site in front of the Castle had revealed the architectural advantage of leaving the site vacant, it is improbable that Lloyds Mansion will be erected in that position.



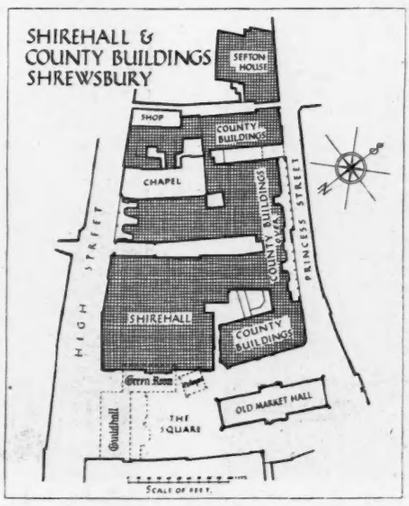
VIEW OF LLOYDS MANSION, SHREWSBURY.
Demolished in 1937 to afford a site for extensions of the Shirehall and County Buildings.



EXTENSION OF THE SHIREHALL AND COUNTY BUILDINGS, SHREWSBURY.

MR. A. G. CHANT, F.R.I.B.A., COUNTY ARCHITECT.

THE new extension of the original County Offices faces the Square and returns a short distance along Princess-street. Local Grinshill stone has been used for these elevations, the remaining fronts being faced with Shropshire bricks and Grinshill stone dressings. The whole of the floors are in reinforced concrete, the ground floor being of special construction to withstand the total collapse of the upper floors, thus providing shelters in the basement. The main staircase is in reinforced concrete faced with Travertine marble. Floors generally are covered with Rhodesian teak-wood blocks with the exception of the committee-room suite,



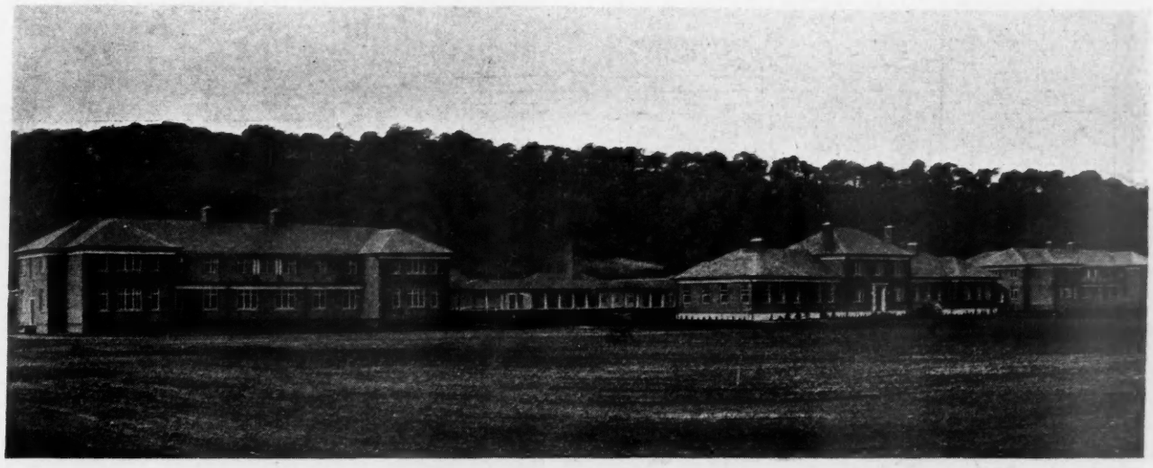
which is floored with compressed cork tiles for quietness. Corridors are lined with teak flush panel dadoes, with plastered walls above, and doors opening on to the corridors are of flush panelled teak. The committee-rooms have solid teak moulded plinths and doors, whilst the specially designed tables are constructed in solid French walnut of attractive graining. Ceiling heating has been employed in the new committee-rooms.

The general contractors were Messrs. Edgar Crowder, Ltd., of Birmingham, the Trussed Concrete Steel Co., Ltd., being responsible for reinforced concrete. Sub-contractors engaged are on page 737.

THE MAIN STAIRCASE. *Below*: TOWN CLERK'S ROOM.

MAIN COMMITTEE ROOM. *Below*: COUNCIL CHAMBER.

EXTENSION OF THE SHIREHALL AND COUNTY BUILDINGS, SHREWSBURY. MR. A. G. CHANT, F.R.I.B.A., COUNTY ARCHITECT.



A GENERAL VIEW

SCHOOL OF AGRICULTURE, HOUGHALL.

MR. W. CARTER, A.R.I.B.A., ARCHITECT TO DURHAM AGRICULTURAL COMMITTEE.

SITE.—Erected for the County Agricultural Committee of the County Council of Durham, this school has a beautiful setting on the outskirts of the city of Durham, with a magnificent background formed by Mount Joy Wood. The buildings are grouped to blend with the natural beauty of the site.

SCHEME.—The general scheme of buildings comprises:—

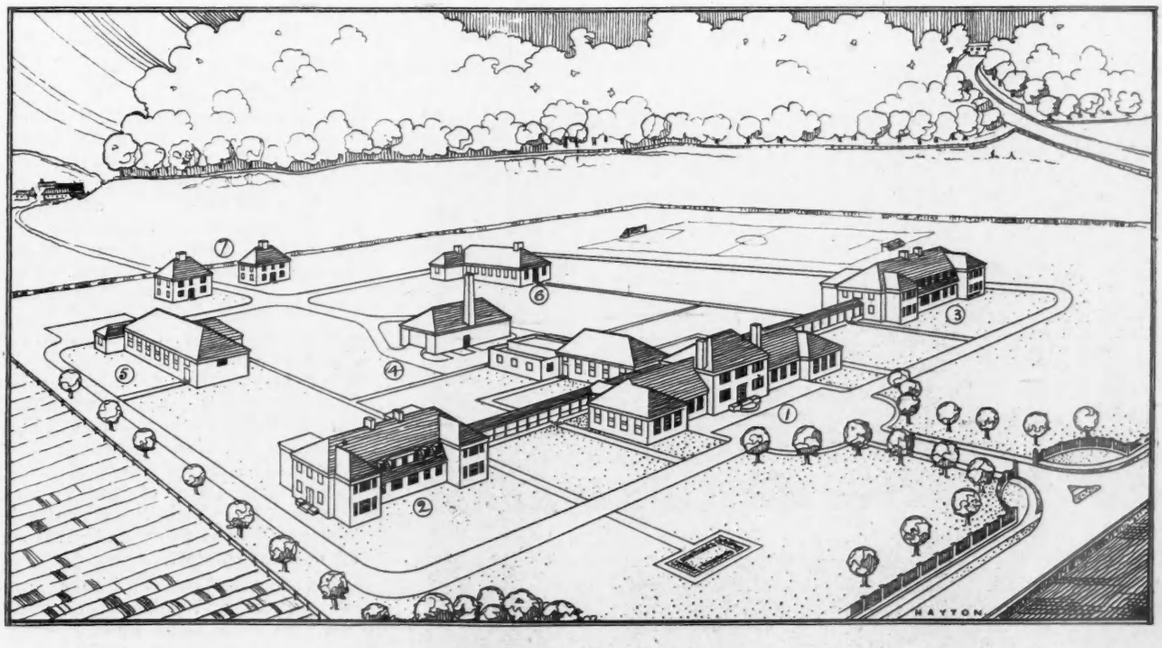
Main Block.—In the centre, the Teaching Block, with classrooms, laboratories, library, dining hall, kitchens and offices, two laboratories for chemistry and bacteriology, and two laboratories for biology and veterinary science, and two large lecture rooms. Laboratory equipment, whilst embodying the most recent ideas, is plain but substantial. Rooms are airy and light, and the colour scheme gives a very pleasing effect. The dining-room will seat 120 with fully equipped kitchen (cooking is by steam). Cold stores and sculleries are conveniently arranged.

Upstairs.—Above there is a committee room with panelled walls and pleasing furniture, adjoining which is museum and library; this latter room is to be made a feature of the school and will be available for reference purposes.

Hostels flank the main building, to which each is joined by a pleasing colonnade. Each hostel has accommodation for 30 students, *plus* residential staff, and has a games room for students and common-room for staff. The hostels are not of the usual institutional type, everything having been done to make them as homely as possible.

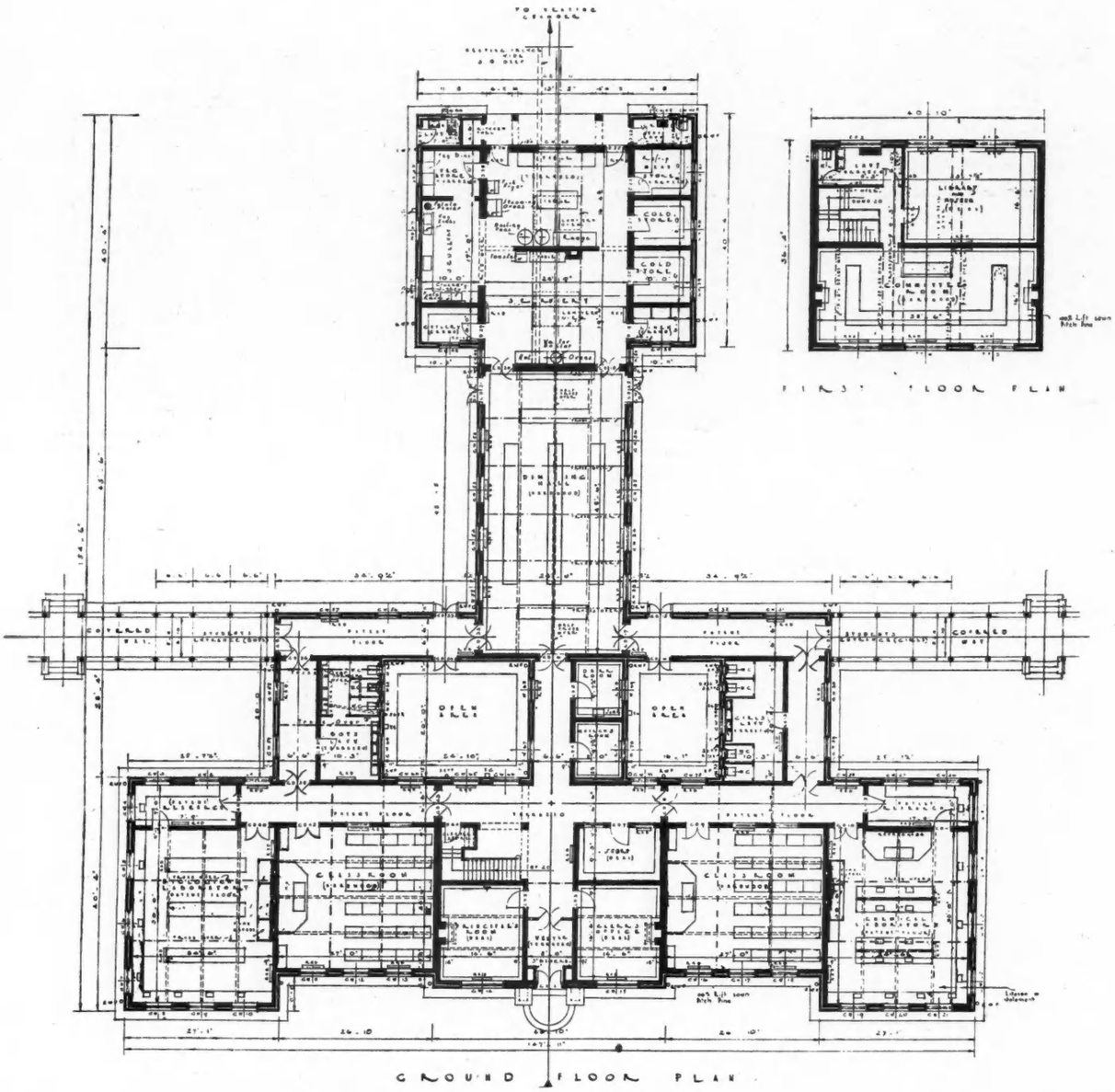
Matron's and Maids' Block.—This consists of 10 bedrooms for maids, a combined room for the cook, and a small self-contained suite of rooms for the matron. In addition there is a large common-room.

Conference Hall.—Accommodation here is for 250, with stage, anterooms, etc., these being fitted with a cinema projector. A special feature is a large electric kitchen equipped for demonstration purposes, and for

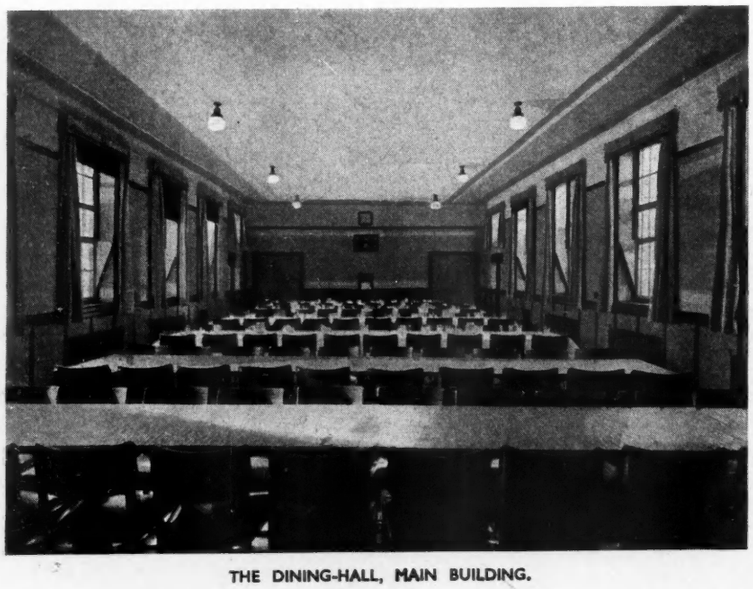


KEY TO BIRD'S-EYE VIEW.

1. SCHOOL BUILDING.
2. BOYS' HOSTEL.
3. GIRLS' HOSTEL.
4. GARAGE AND HEATING CHAMBER.
5. CONFERENCE HALL.
6. MATRON AND MAIDS
7. CARETAKERS' COTTAGES.



PLANS OF MAIN SCHOOL BUILDING.



THE DINING-HALL, MAIN BUILDING.

SCHOOL OF AGRICULTURE, HOUGHALL, DURHAM.

fruit and vegetable preservation and other activities of Women's Rural Institutes. The idea of the conference hall is to provide a meeting place for all agricultural activities, for the needs of the school and the agricultural community at large, and also women's institutes. The school is under the direction of the Durham County Director of Agriculture, Mr. J. W. Cassels, O.B.E., B.Sc.(Agric.).

FURNITURE AND FURNISHINGS.—The furniture is plain, substantial, and specially made for hard wear. It has many novel features, and shows that it is the result of study and consideration of the special purposes for which it is required. The result is pleasing and gives an air of home comfort.

STRUCTURE.—The buildings are erected on a reinforced concrete raft, the walls being built of sand-faced bricks finely graded in their differing tones. The eaves are con-

structed with reinforced concrete and coved. The steel-framed roofs are covered with Westmorland green slates.

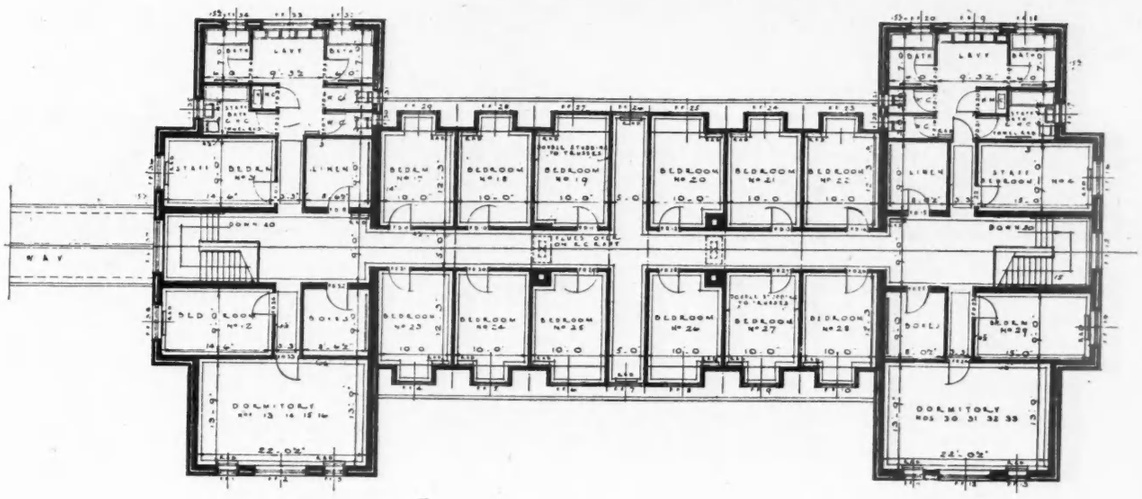
GROUNDS.—It is intended to lay out the grounds with specimen trees and shrubs which are suited to the climate of the north-east. The laying out of the grounds must of necessity be done gradually.

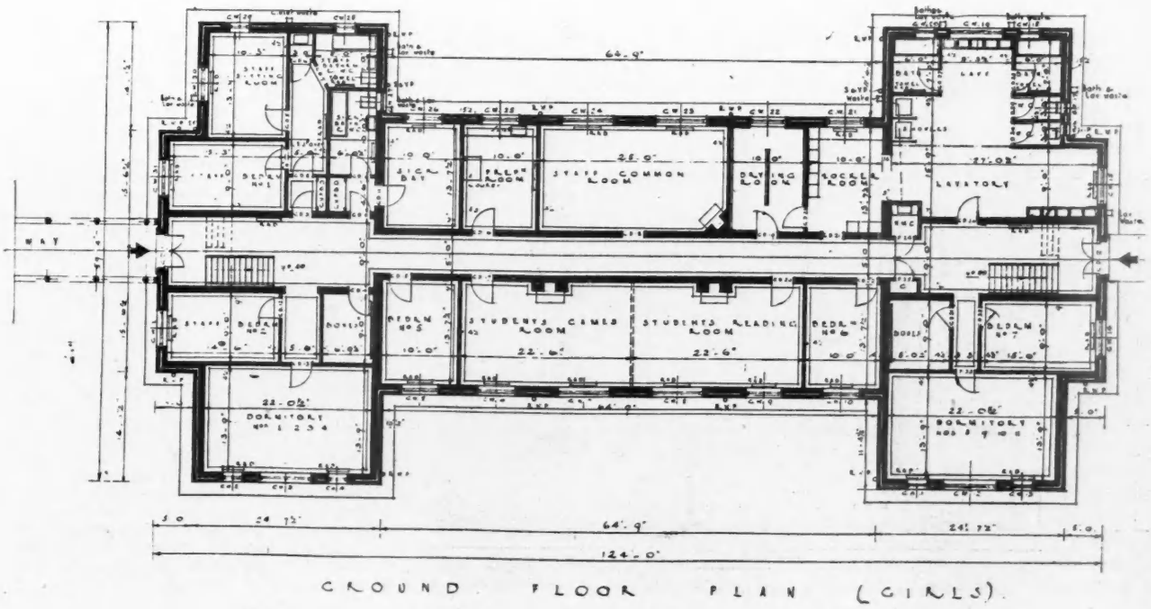
OUTDOOR SPORTS.—Adjoining the school are a playing field for hockey, cricket or football, and tennis courts (hard).

The whole building blends well into its surroundings. The effects have been obtained not by any structural extravagance but by simple treatment of the building materials used and in the grouping of the windows, doors, etc. Internally, the effects have been obtained by pleasing lines, the colour scheme, and tiling of the walls.

The architect is Mr. W. Carter, A.R.I.B.A., architect on the staff

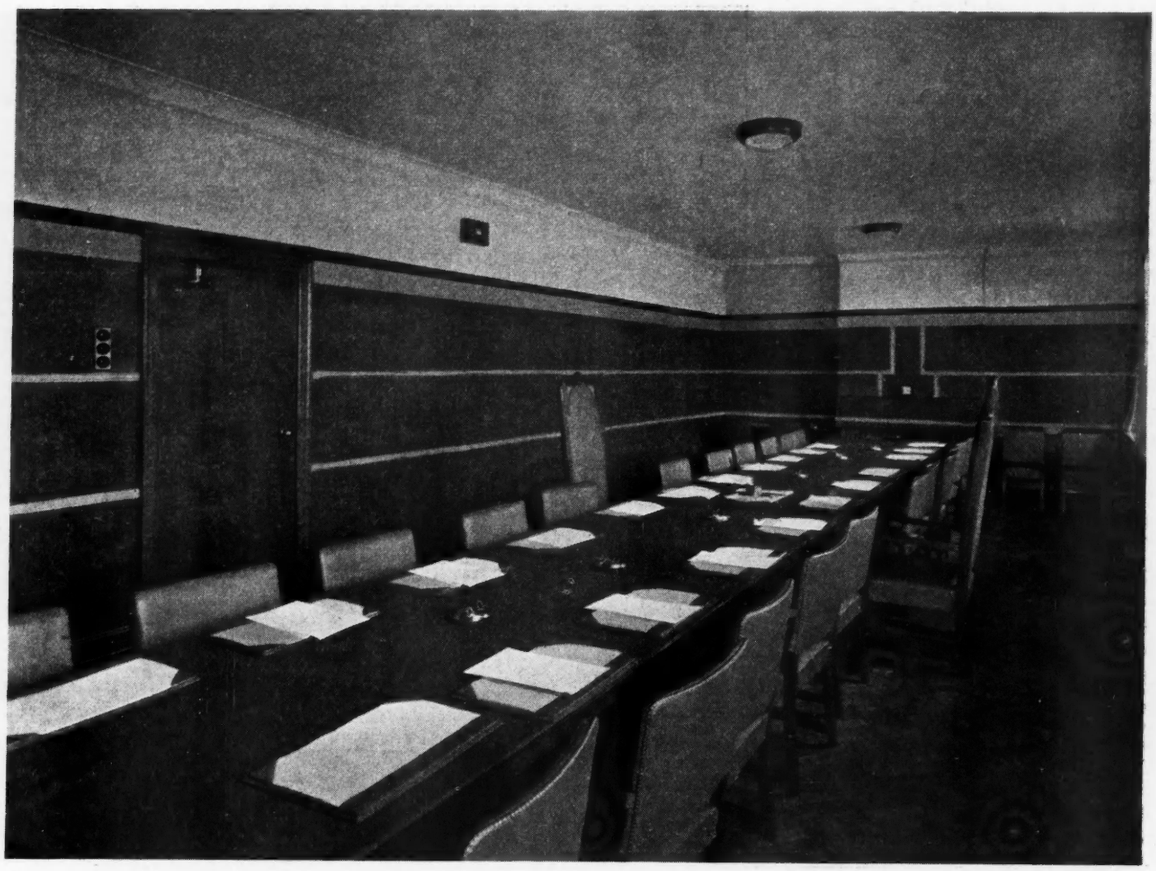
A CHEMISTRY LABORATORY, MAIN BUILDING.



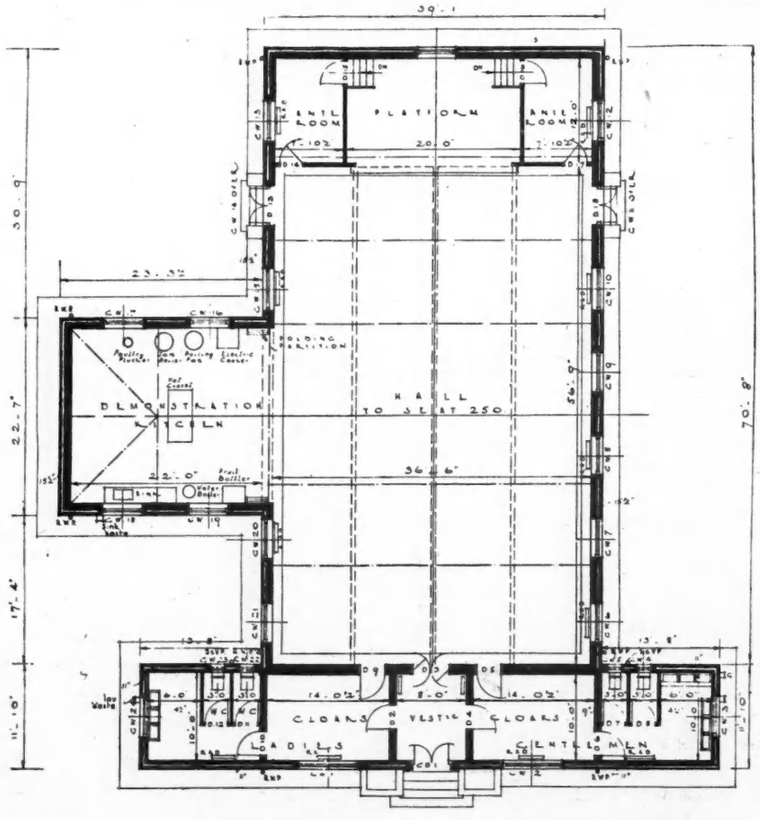


PLANS OF GIRLS' HOSTEL.

MR. W. CARTER, A.R.I.B.A., ARCHITECT TO COUNTY AGRICULTURAL COMMITTEE.



THE COMMITTEE ROOM, FIRST FLOOR, MAIN BUILDING. *Below* : PLAN OF CONFERENCE HALL.



of the Agricultural Committee of the County Council, who prepared the design and supervised the work. The plans were approved by the Royal Fine Art Commission. "The whole of the works," states the architect, "are a credit to the contractors, Messrs. W. Pearson & Son, West Hartlepool, and to the craftsmen employed."

Sub-contractors and suppliers were :—

Heating engineers, W. Richardson and Co., Ltd., Darlington; cold water service, W. H. Fairclough, Sunderland; fire-resisting floors, Bolton and Hayes, Ltd., Bolton; electrical installation, F. Reid, Ferens and Co., Ltd., Sunderland; metal windows, Henry Hope and Sons, Ltd., Smethwick; sewage purification, Adams Hydraulic, Ltd., York; kitchen equipment, Carron and Co., Carron, Falkirk; hardware, N. F. Ramsay and Co., Ltd., Newcastle-on-Tyne; sanitary fittings, Isaac Robson and Co., Ltd., Stockton-on-Tees; furniture and furnishings, etc., Bainbridge and Co., Ltd., Newcastle-on-Tyne; laboratory fittings, etc., folding and sliding screens, etc., the North of England School Furnishing Co., Ltd., Darlington; floor and wall tiling and terrazzo, Commercial Marble and Tiles, Ltd., Newcastle-on-Tyne; panelling, Coutts and Findlater, Ltd., Sunderland; wrought-iron railings and entrance gates, B. Rowell and Co., Ltd., Westminster, S.W.1; tennis courts, the En-Tout-Cas Co., Ltd., Syston; and cables, Callender's Cable and Construction Co., Ltd. To this last firm we are indebted for the loan of the photographs reproduced.

SCHOOL OF AGRICULTURE, HOUGHALL, DURHAM.

MR. W. CARTER, A.R.I.B.A., ARCHITECT TO COUNTY AGRICULTURAL COMMITTEE.

THE CLACTON RAID

REPORT OF CIVIL DEFENCE COMMITTEE.

MEMBERS of the Clacton Civil Defence Committee have inspected the damage, etc., caused by the recent crashing of the mine-laying aeroplane and the explosion of a magnetic mine at Clacton.

A close examination of the area affected was made. In assessing the damage and number of casualties, regard was had to the fact that the aeroplane did not crash from a height and an interval of some four minutes elapsed between the crash and the explosion of the mine. Although carrying a heavy charge of explosive, the mine had a comparatively thin casing, and also it had no impact velocity. The explosion, therefore, was of the surface type producing the maximum of blast in all directions.

Extensive damage was done over a limited area. Houses directly opposite and within 30 yards constructed with 9-in. brickwork were not, however, demolished, and had the residents crouched below the glass line on either floor, good protection would have been afforded from broken glass, splinters and flying debris. 4½-in. brick division walls facing the explosion were bulging towards it. Chimneys were cleared of soot and ceilings had been brought down. Where blast had travelled up the road, not parallel to it but diagonally, the tremendous displacement of air and the resultant rapid replacement had, on the near side of the road, drawn out into the front gardens doors and bay windows, together with the frames. Although glass over a wide area was shattered, it was apparent that leaded lights had some advantage over larger panes of glass. The latter were evidently reduced to splinters, whilst the former, although blown in, consisted in many instances of sections still held together with the lead glazing bars. Roof tiles were displaced and broken for some considerable distance, but chimney stacks and pots, except in one instance only, were still in good condition. Staircases were intact and afforded good means of access to the first floor.

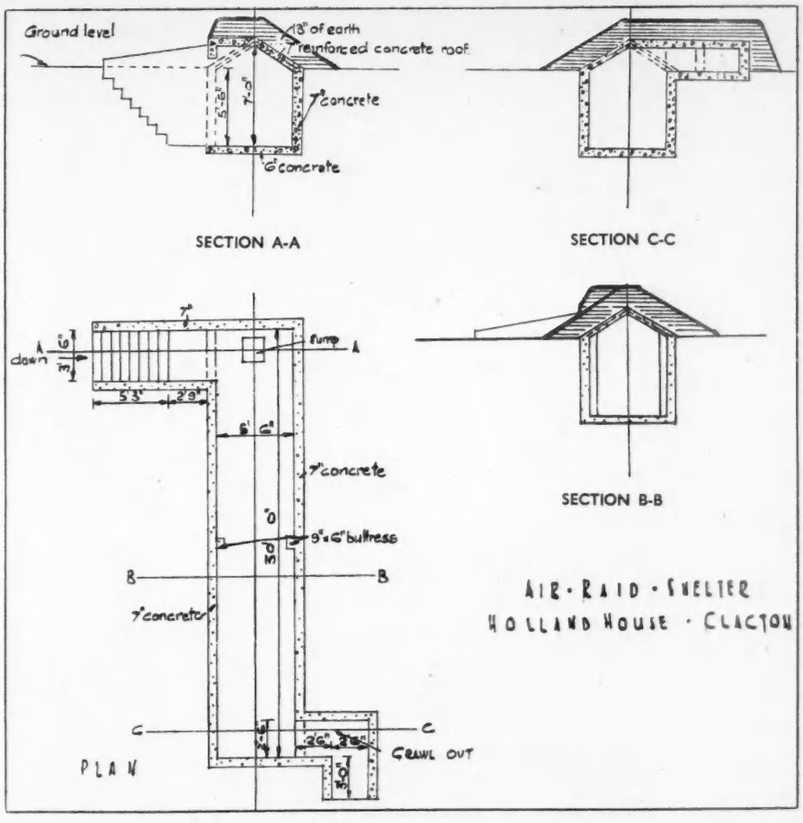
A shelter some 12 yds. from the edge of the crater was closely examined. The construction was of concrete, about 20 ft. in length, about 4 ft. 6 in. in the ground, and the entrance at right angles to the force of the explosion but to the left of it. Its condition was perfect, and there was no evidence of cracks from earth vibration.

The casualties resulting from the raid consisted of two deaths and 156 injured, 30 being serious cases. Apart from a number of fractures and a few cases suffering from blast and shock, the bulk of the injuries were due to broken glass.

Some doubt existed as to whether the A.R.P., etc., services arrived as a result of control centre, police or other calls, but in addition to the fire services, a mobile first aid unit, four stretcher parties and a rescue party were quickly on the scene. Valuable service was rendered by three doctors who attended. All services, including fire, worked together as one in extracting and collecting casualties. The work was hampered by the absence of light, rendered necessary by the presence of other enemy aircraft. Most of the less serious cases made their own way to first aid posts and the hospital; a few hospital cases also arrived at the first aid post. All casualties were cleared in 2¾ hours.

It is observed that no warning siren was sounded, and it is suggested that this avoided a greater number of people being in the streets at the time of the crash. The lapse of time between the crash and explosion of the mine resulted in people looking out of windows, etc., and thus exposing themselves to the effect of the blast. It is also suggested that an actual air raid would result in damage on a much larger scale with casualties containing a higher percentage of serious or fatal injuries, and the work of the rescue and first aid services would be much more difficult. The need for the attendance of medical practitioners at the scenes of incidents is stressed.

THE ENTRANCE TO THE SHELTER AFTER THE EXPLOSION



AN AIR-RAID SHELTER, CLACTON-ON-SEA.

ONE of the most interesting features of the recent enemy aircraft crash and mine explosion at Clacton was the satisfactory behaviour of a reinforced concrete air raid shelter which, although situated only 60 ft. from the point of explosion, suffered no damage. This is interesting in view of the considerable structural damage suffered by property in the vicinity, which resulted in at least four houses having to be demolished. Erected to give protection to the tenants of Holland House, the shelter was constructed to the design of Mr. G. H. B. Gould, A.R.I.B.A., of Clacton, about two weeks after the outbreak of war. The structure was of the semi-sunk type, approximately 5 ft. 6 in. below ground, with a pointed roof giving a maximum head clearance of 7 ft. The inside dimensions of the shelter are 30 ft. long and 5 ft. 6 in. wide. Entrance steps were screened in accordance with the usual practice, an emergency exit was provided and additional protection was obtained from a layer of earth and rocks, about 2 ft. thick.

WAR-TIME BUILDING

LECTURE TO THE R.I.B.A.

A LECTURE on this subject was read by MR. R. FITZMAURICE, B.Sc., to the R.I.B.A. on Tuesday. MR. A. H. MOBERLY was in the chair.

In time of war (said the lecturer) there is inevitably a larger programme of building required as a direct outcome of the national war effort. Some of the more important items in the programme are the following: New factories and extensions to factories producing commodities necessary to the military effort; barracks and camps for the Armed Forces; storage space for munitions of war, equipment, etc.; structures required for defence; housing for workers engaged in the production of munitions of war; and shelters for the population at home and at work against air attack.

With the constantly changing fortunes of war it is evident that unforeseen demands may be placed on the industry at short notice, and at no time is finality in sight.

War conditions impose considerable difficulties in regard to the supply of building materials, and to a less extent there are serious problems to be faced in the supply of labour. The balance of trades tends to shift right away from peace time conditions owing to the different types of structure needed in war time. The main problem can be stated quite briefly: There is a great shortage of timber owing to the fact that the Baltic is now closed to us, and steel is in such demand for actual munitions of war that it must be conserved to the utmost for use in building. It will be seen, therefore, that the main problem to be faced is a shortage of those materials which we ordinarily rely on to withstand tensile forces, and this affects primarily the construction of floors and roofs.

There are many other problems in war time buildings—such, for instance, as doors, windows and fittings of all kinds—but it is for floors and roofs that there is a need of tensile material in quantity, and this paper is confined to this particular aspect. Walls, columns and the vertical components of buildings can be erected without the use of timber or steel, and there are many alternative forms of construction available. This means in some cases a reversion to methods of construction which were in general use 40 years ago, and load-bearing walls and piers must be used wherever conditions allow it. Panel fillings in fully framed structures have tended to oust the load-bearing wall, and we may have to refer to old text-books to refresh our memories of masonry construction.

The problem of the suspended floor and roof is really a formidable one, and the following are suggested as a number of lines of approach:—

1. The Vault.

The Romans, and later on the mediæval builders, covered wide spans with no steel and little timber. The arch is, in fact, a structure which can be erected without using any material possessing an important degree of strength in tension. From first principles, therefore, it can be foreseen that the full exploitation of the arch is one of the methods of overcoming present difficulties. The masonry arch, employing no steel at all, has lagged behind other forms of construction in modern developments in building. The free availability of steel is probably the reason for this, but the result is that there is no satisfactory basis for design, and a lengthy process of research is needed to find one. As an example, conventional methods of calculation suggest that a 9-in. segmental arch ring, with no haunching, is unstable over a span of about 20 ft., whereas common practice in the erection of kilns and similar structures shows that such an arch is quite safe. Centering for arches and vaults presents a problem when timber is scarce, but if these structures are to be made use of, this difficulty can be overcome by standardising spans and maximum use of a limited amount of centering. The masonry arch may be a solution of the problem of small dwellings; one can imagine terrace construction with a system of continuous arches, unbalanced thrusts at the ends being taken by buttresses or piers.

For long spans also the arch is eminently suitable and already has established its position. The forces involved are mainly compressive, and a very moderate amount of steel is sufficient to deal with the bending forces in a well-designed arch ring. For this reason reinforced concrete is the ideal medium for the long-span vault, and enables space to be covered with great economy in steel (see Fig. 1). These structures have been highly developed in France, and, by suitable organisation, great speed of erection is possible. Thus, on 110-ft. span a rate of progress of 10 metres length of vault per day is regarded as quite practicable.

These large vaults are normally built on travelling centres and a strictly limited amount of falsework enables a large structure to be erected rapidly. It is obvious, of course, that the all-steel arch is uneconomical in steel for present-day conditions since this involves the use of steel to withstand mainly compressive forces for which there are plenty of other materials available.

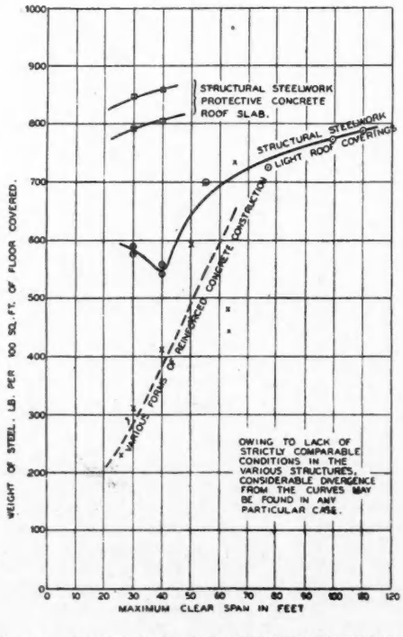

STRUCTURAL STEELWORK PROTECTIVE CONCRETE ROOF SLAB.
STRUCTURAL STEELWORK & LIGHT ROOF COVERINGS
REINFORCED CONCRETE CONSTRUCTION
VARIOUS FORMS OF
OWING TO LACK OF STRICTLY COMPARABLE CONDITIONS IN THE VARIOUS STRUCTURES, CONSIDERABLE DIVERGENCE FROM THE CURVES MAY BE FOUND IN ANY PARTICULAR CASE.
WEIGHT OF STEEL, LB. PER 100 SQ. FT. OF FLOOR COVERED.
MAXIMUM CLEAR SPAN IN FEET
0 100 200 300 400 500 600 700 800 900 1000
0 10 20 30 40 50 60 70 80 90 100 110 120

FIG. 1. CURVES SHOWING APPROXIMATE TREND OF WEIGHT OF STEEL IN VARIOUS TYPES OF FACTORY CONSTRUCTION.

2. Trusses, Beams and Slabs.

Apart from the arch, all floor and roof structures act as beams, and the main forces involved are equally divided between tensions and compressions. The object in any type of structure should be to use steel with the maximum economy and, under war conditions, almost every other consideration save speed is subordinate to this.

There are two main forms of construction available: steel and reinforced concrete. It has been the custom in the past to make the main structural framework of buildings entirely of steel, or entirely in reinforced concrete. There has been some rivalry between advocates of the two methods of construction which has extended even to designers. Actually there is no possible technical reason why this separation should exist, and it is quite likely that the most suitable structure for a particular job may be found to be a combination of steelwork and reinforced concrete. Factory buildings in France consist of a grillage of reinforced concrete columns and beams supporting light steel trusses, with north-light glazing. This system has obvious advantages; there is the minimum of weight in the roof covering and a method of construction which can be erected very quickly, but as the loadings get heavier in the lower parts of the structure there is a change over to reinforced concrete, with an accompanying saving in quantity of steel. Studies are being made at the Building Research Station of composite structures suitable for British conditions.

It remains to consider how present knowledge can be applied to ensure the maximum economy in steel with our normal methods of construction.

(a) ALL-STEEL CONSTRUCTION.—A study has been made of typical single-storey continuous factory structures and the results are given in Building Research Wartime Building Bulletin No. 1, with supplementary designs in Wartime Building Bulletin No. 4 (in the press).

A preliminary study of the factors involved in the application of reinforced concrete to wartime building is given in Wartime Building Bulletin No. 2 in this series, and some comparative data are given for weights of steel in the various types of structure. These data are reproduced in Fig. 1.

It will be apparent from these curves that economy in steel is related with clear spans. Long spans require more steel and, moreover, in latticed structures, considerably more fabrication. In order to reduce steel weights, spans for wartime factories should be no larger than is essential for the process being carried out in them.

(b) REINFORCED CONCRETE CONSTRUCTION.—On reference to Fig. 1 it will be seen that reinforced concrete offers further important economy in quantity of steel, but that for beam and slab construction the limitation of spans is even more important than with all-steel construction. The reason for the steel economy is obvious; in reinforced concrete the tensile forces are taken by the steel and the compressive ones by the concrete, thus using both materials to the best advantage.

Another advantage of reinforced concrete construction is that the dimensions and arrangement of the reinforcing steel can be modified at any stage in the construction programme to meet changing conditions in the supply of material. Thus, for instance, it might be found that ¾-in. bars, specified as the main reinforce-

ment for a particular structure, were unobtainable at the time they were needed, but ¾-in. bars were offered; it would be a simple matter for a competent designer to redistribute the reinforcement to use the material available and there would then be no delay.

The problem of formwork for reinforced concrete construction is, however, a formidable one, owing to the shortage of timber. It is possible, however, to exaggerate the difficulty. Admittedly, in peacetime larger quantities of timber have been used and turned to waste in reinforced concrete formwork. This was a natural outcome of the cheapness and convenience of timber, but the more progressive firms in the reinforced concrete field have long since abandoned the practice of using timber so that large quantities of material run to waste. There are various systems of proprietary formwork and propping which are virtually permanent and reduce waste to a very small quantity. There is, in fact, a large quantity of this proprietary material, sufficient with proper organisation to enable a large programme to be carried out.

A first reaction to the difficulty with regard to the supply of formwork is to substitute precast reinforced concrete construction for work *in situ*. This, however, should on no account be accepted without proper investigation in any given case. An important factor in the economy of soundly designed reinforced concrete construction is the saving due to full exploitation of the advantages of continuity, which are readily obtainable in construction *in situ*. Where, therefore, beams and slabs can be made continuous over several supports it is questionable whether *in situ* construction should be abandoned.

Where there is, or can be, an element of repetition in the structure, this simplifies the problem of formwork, and it would be unwise to abandon *in situ* construction in favour of precast work. Some studies have been made of the relative merits of "precast" and *in situ* construction for the roofs of hutting, and these are given in the Appendix to Wartime Building Bulletin No. 3.

The problem of formwork and its importance in terms of quantities of material required is dealt with in Wartime Building Bulletin No. 5 (in the press), which gives type designs for reinforced concrete factories in a series parallel with those given in Wartime Building Bulletin No. 1. Schemes have been worked out whereby precast construction can be jointed in such a manner as to obtain the advantages of continuity, and this is an important development which merits consideration. For simply supported beams and slabs it is obvious that precast construction offers the greatest advantages provided the members are of a size and weight reasonable for handling.

Conclusions.

1. It is essential to use timber as sparingly as possible in building and to economise in the quantity of steel.

2. In so far as these two materials are those mainly relied on in building to resist tensile forces it is desirable to ascertain whether there are suitable alternatives. Up to the present no alternative material has been found to possess the required properties, and the problem then becomes one of finding new methods of construction, and adapting existing methods to obtain the utmost economy in the use of timber and steel.

3. The first approach is in the choice of the type of structure to be used for any particular building. The broad trend of steel economy in various forms of construction is set out in Figure 1.

4. Having decided on the type of structure to meet the requirements of any particular building project it remains to ensure that the particular form decided on is the most economical for its purpose. The architect has a definite responsibility here, and an entirely new set of conditions with which to contend. He must realise that:—

(a) Economy in steel is related with clear spans. Long spans require more steel, and the architect must plan in war time to reduce spans to the minimum compatible with the purpose for which the building is required. There is a certain hypnotic quality in long-span structures which is apt to be associated with efficiency in production, and no doubt this has its foundation in actual fact. In war time, however, long spans are luxuries which we cannot afford to possess for their own sake. If we find long-span structures being erected for the manufacture of components of moderate size or for office accommodation, or for other purposes where clear space is not essential, it can be assumed that our most valuable material is being used wastefully.

(b) Where reinforced concrete construction is employed, as it should be up to the limit of the capacity of that section of industry which is organised for it, the present-day difficulties in building call for particularly close co-operation between architect, engineer and contractor at the very earliest stage in the work. The first studies of the project must include full consideration of the method of construction, type of formwork, etc. A scheme drawn up without reference to the method of erection of the building starts at a grave disadvantage both from the point of view of speed of completion and economy in material.

5. There are many new requirements for war time building which complicate the architect's problem. It is necessary to emphasise here that close study must be given to all the following:—

(a) Passive air defence, including protection of persons, plant and structures, and camouflage.

(b) Changing conditions in the supply of material which demand inquiry at the inception of the project as to the most suitable type of structure at the time of erection.

All these points are best dealt with in collaboration with the appropriate authority at the earliest stage, since at later stages much time and material may be required to make good deficiencies in the original design.

EMERGENCY INQUIRY BUREAU

Questions from readers arising out of War-time difficulties and recent Emergency legislation will be answered by a special staff of contributors. Questions, which should be addressed to the Editor, should be accompanied by a stamped addressed envelope.

Second-hand Timber.

SIR,—*I am in possession of certain stocks of second-hand timber which I wish to sell. Is it necessary to register these with the Timber Control? Also what, if any, are the regulations as to price?* NORTH.

All timber stocks, new or second-hand, must be registered. Sales (which must be effected according to the Controller's regulations) can be made at prices which must not exceed the maximum controlled prices for the grade of timber. (See Timber Control Orders Nos. 1 and 8.) If it is impossible to classify the grade of second-hand timbers, it must be assumed to be of the lowest grade of its kind.

IN PARLIAMENT

Shelter Policy.

AN interesting review of the Government's shelter policy was made in the House of Commons by the Home Secretary, SIR JOHN ANDERSON, who said that a recent return from the local authorities showed that the total number of persons for whom shelter has, in fact, been provided happens to be, for practical purposes, 20,000,000. It was perfectly true that that figure did not represent the provision of shelter for all. But the Government did not set out to provide shelter for all, and they made it clear that they were first of all going to discriminate between area and area, and concentrate their efforts on the provision of shelters in the most vulnerable areas. Beyond that, they made it clear that, so far as domestic shelter was concerned, they looked to those who could be fairly expected to provide shelters for themselves to do so.

But the Government were still pressing forward to improve upon the existing provision of shelter protection, which already represented the accomplishment of their initial aim. It was also true that the distribution of shelter protection was not uniform, even in areas of any particular classification, but it was broadly true that the provision of shelter was best where the needs were greatest—that was, because attention had been concentrated on those special target areas. But there were gaps which need to be filled. They would use all their efforts to ensure that in the shortest possible period those gaps were filled. Powers had been taken under Defence Regulation 29A, and they would not hesitate to use them. The provision of shelter in factories was, for all practical purposes, complete. The same was broadly true of the provision of shelters in mines. As regarded commercial buildings, the returns from local authorities showed gratifying and encouraging results.

"When we were urging upon local authorities and others concerned," continued SIR JOHN ANDERSON, "to put every possible effort into the provision of specially constructed shelters, we advisedly did not make reference to the degree of protection which is provided by an ordinary soundly-constructed house. The degree of protection so provided is, in fact, very substantial, and if people who have not special shelters provided in their houses or close to them will carry out the advice given in a booklet which has been widely distributed, called 'Your Home as an Air-Raid Shelter,' they will be well advised when an air-raid warning is given to stay in their houses rather than rush out into the street and try to find their way to communal shelters.

"We have recently issued to local authorities a memorandum giving particulars of a method of providing really effective shelters by making use of derelict houses. It is a very ingenious method, which has recently been evolved by my technical officers. It takes the form of adapting derelict houses of two storeys. The great problem in the provision of shelters is that of materials and labour, and anything which can reduce the demand on those two rather scarce commodities is all to the good. What can be done with a derelict house is this. Strip the roof, prise away the roof beams, cut the roof beams into suitable lengths for strutting the ground floor, use the bricks of the upper courses to cover the top of the first floor so as to provide overhead shelter, and with the bricks that are over block up window openings and so forth. The result is that, without any expense on material and by using labour which may be more readily available than the skilled bricklayers for which there is a great demand, you can in a very short time provide a really adequate form of shelter. In that way it will be possible in a number of areas where shelter provision is not quite adequate to make up the deficiency to a large extent very rapidly. These instructions were issued only within the last few days, but there are already indications that some local authorities are proceeding to act on them."

Turning to the question of deep or strongly protected shelters, SIR JOHN ANDERSON said that the Government had been criticised be-

cause they concentrated attention on what could be provided quickly, namely, on the splinter and blast-proof shelter, which did undoubtedly give protection against by far the major part of the risk to which the civil population would be exposed. The decision reached after consideration of the matter was that to provide special strongly-protected shelters for the workers in those establishments would involve technical problems so difficult that it must be regarded as impracticable in any short space of time to provide such shelter on any substantial scale. The difficulties were due partly to the time factor, partly to considerations of space, and partly to questions of labour and material, but they were also psychological. It was found that there was a definite reluctance on the part of workers to support plans for the provision of shelters for themselves at their places of work which would be out of all scale with the shelter provided in the ordinary course for their wives and families.

He was devoutly thankful that they did not adopt a general policy of providing deep or strongly protected shelters. Had they done so they would at this moment have been in a far worse position. The country would have been caught with a very limited amount of shelters in course of construction and not completed. They would have been faced with the two inevitable shortages of labour and material, which had now occurred and which were affecting even the provision of splinter and blast-proof shelter. The period of warning on which they could rely, which was estimated at from 5 to 7½ minutes, might in many cases be much shorter. The period of warning was an important factor in considering the sort of shelter that it was best to provide The longer the period of warning the less the objection to large and strongly protected shelters, for it would take people some time to go to them. The shorter the period of warning the greater the danger of people leaving the comparative shelter of their homes and being caught in the streets and perhaps machine-gunned while trying to find their way to communal shelter.

There had recently come into prominence an idea that, without going to the length of providing deep or heavily protected shelters, they might have provided a type of splinter and blast-proof shelter which would serve its purpose well in the first instance, and could be converted later into something intermediate between the splinter and blast-proof type and what was called a deep shelter. He did not dismiss that idea at all. A long time ago he put it to his technical advisers, and they said then that it looked a good idea, but that they believed it was impracticable for the reason that in order to provide a more strongly protected shelter at a later stage they would, at the beginning, have to make the surrounding walls so substantial that the task would be almost as complicated and difficult, and as heavy in terms of material and labour, as if they set about providing heavily protected shelter from the start. Further examination of the problem had led to the conclusion that that was an erroneous view, and they now considered that a 50-unit communal shelter of the splinter and blast-proof type could be built which could, without great difficulty, be adapted later to afford substantial increased protection; and he had made arrangements to ensure that where local authorities provided splinter and blast-proof shelters, according to designs to be modified on the lines he had indicated, the Government would pay the full grant.

Mr. W. Roberts said that the Government slogan should be " More and better shelters." He hoped finance would not stand in the way. Neither should any shortage of bricks be allowed to hold up the programme. Why not ask for volunteers, after they had completed their usual tasks, to do some of the unskilled work in the provision of shelters?

Mr. Noel-Baker also urged that there should be more deep shelters. Every steel-frame building in this country ought to have a shelter in its basement. He also advocated the use of underground railway stations as additional shelters, and suggested that there should be tunnelling. The unemployed building workers could be put on the job, and there were many small contractors and many architects who were not only out of a job, but who were almost starving, and who were just the men needed. Their knowledge could be brought together with this unused skilled labour and idle materials to improve the protection of our nation. But to do that the Government must take it in hand, must organise it and give orders.

Mr. Ellis Smith said that he had read closely the technical journals which were concerned with this matter, such as *The Builder* and the *Architects' Journal*. He found that, generally speaking, adequate air raid shelter accommodation had been provided for those who were relatively well-placed, but this had not yet been done for the people in the lower grades of income. He pleaded for immediate and energetic action to have the advice given in the Government circulars carried into effect in certain areas. They found, from the experience of Rotterdam how essential it was that effect should be given to this plea. Accommodation should be made available for those people who were working so hard to secure an increase in industrial production.

Mr. Mabane, Parliamentary Secretary to the Ministry of Home Security, in reply, said that it would be the intention of the Ministry to secure that shelter was provided at the greatest possible speed, and then if they found that bricklayers were apparently not available for their purpose, they would have to appeal to the Ministry of Labour, who controlled these matters.

A.R.P. SCHEMES

LONDON.

BARNES.—T.C. to carry out sandbag protection work at isolation hospital, at £140.—Richmond Main Sewerage Board stated that they propose carrying out certain work in connection with air raid precautions, at £5,560.—Watney, Coombe Reid and Co. agreed to shelter on their land in Ship-la.—Additional public shelters to hold 50 persons, to be erected as follows: Sheen Common, near Bog Gate; Lonsdale-rd. embankment, opposite Gerard-rd., and North Worple-way junction with Mullins Path; land at side of 80, Castelnau; Lowther Lawn Tennis Club ground; Fanny-rd. School-yd.

BATTERSEA.—B.C. recommended following: Latchmere-rd. baths, staff shelter, £134.

DARTFORD.—T.C. are to make application to the Home Office for approval to £400 for erecting and equipping a wooden hut adjoining auxiliary fire station for auxiliary firemen.—Kent C.C. given approval to public surface shelter on roadside margin of south-eastern corner of junction of Princes-rd. with Darenth-rd. Tenders being invited.

GREENWICH.—B.C. recommend shelters to accommodate 200 persons on site at corner of Gonson-st. and The Stowage, S.E.8, and tender of Harry Groves and Son, Stockwell-st., S.E.10, be accepted at £569.—Subject to approval of M.H. tender of Harry Groves and Son to construct an expedient mortuary at Blackwall-la., S.E.10, for £618, accepted, and for air raid shelter at Ransom-rd. Arches, Ransom-rd., for £178.

HENDON.—Following intimation that M.H. would be prepared to approve adaptation of Nelson's Club as public mortuary, tenders of Roger Malcolm, Ltd., at £282, been provisionally accepted by T.C.—M.H. agreed to inclusion in Council's statement of £2,293 in connection with public mortuary, Claremont-rd.—Site on east side of Brent-st. at rear of Arkleigh Mansions to be requisitioned for surface shelter.—Approval of Middlesex C.C. received to £241 7s. 6d. based on tender submitted by W. Richards and Sons in respect of the conversion of basements of two houses in Golders Green-rd., at junction of Highfield-rd. as shelters.

WOOLWICH.—B.C. approved, subject to M.H., sandbags at Eltham Health Centre be replaced by concrete blocks, and work be carried out by B.E., at £416.—Further brick-built shelters at £125 10s. approved.—Subject to approval of Minister of Home Security, public shelters to be erected by B.E. at £2,492 6s., and shelter to accommodate 100 persons in Wilmount-street, Woolwich, at £356 10s.—Minister of Home Security approved public shelter at Tithe Barn, McLeod-road, at £1,217 10s., and public shelters at Hough-street, Peakes-place, Lenton-street and Knee Hill, at £3,092 19s.

PROVINCIAL.

BEBINGTON.—Plans for 22 brick and concrete shelters to accommodate 1,100 people been approved by Corporation; also plans for 28 strengthened basements.

BIRMINGHAM.—Works for E.C.: Protection inside buildings at following schools: King Edward's Grammar school, Camp Hill, J. Moffatt and Sons, Ltd., Birmingham, £640; Garrison-la., J. I. Fitter and Sons, £148 10s.; Pitmaston-rd., Asphalt and Public Works, Ltd., £328; College-rd., J. and W. Malley, Ltd., £185; Bierton-rd., Morris Jacombs and Sons, Ltd., £375. All contractors of Birmingham.

BLACKBURN.—T.C. to seek £1,307 loan sanction for first-aid posts.—528 domestic shelters and 30 communal shelters to be erected in Audley area, at £12,403.—Decontamination laundry approved at A.R.P. depot, at £331, and communal brick shelter at Stancliffe-st., at £195. Plans by W. Pickstone, B.E.

CARDIFF.—Corporation placed tender for 49 communal shelters with S. N. Addicott, 135, Corporation-rd., Cardiff, at £3,868 2s. Plans by City E.

CORBRIDGE. — Parish Council asked Northumberland C.C. to provide shelters at two schools.

FORMBY.—U.D.C. to erect 10 public shelters, each to accommodate 50 persons. Plans by E. K. Gollan, E. and S.

GATESHEAD.—T.C. received sanction to erect 635 domestic shelters for 4,044 people at £13,222.—T.C. to convert railway arches in High-st. into shelters, at £360.—T.C. proposes lining with concrete 820 steel shelters, at £2,460, to prevent flooding.—Decontamination depot proposed for G.P.O.

HAZEL GROVE AND BRAMHALL.—U.D.C. propose public shelters. Plans by J. F. Andrews, S.

HEBBURN.—Tender of Tarslag, Ltd., Stockton-on-Tees, accepted for 19 public shelters, each for 50 people.

HUCKNALL.—U.D.C. accepted tender for domestic surface shelters from Bodill and Sons, Ltd., at £438.

KEIGHLEY.—E.C. propose 6 surface shelters at St. Annes and Haworth Council schools. Plans by B. C. Gibson, B.E. and S.

LANCASHIRE.—P.A.C. proposing public shelters at Institutions at Jericho, Bury, with accommodation for 150; Darnton House, Ashton-under-Lyne, for 100; Leigh, for 60; Green-la., Patricroft, for 300; Whiston, for 150; total cost, £2,020. Plans by S. Wilkinson, County Architect, Preston.

LEIGH.—T.C. to erect additional shelters, at £40,000.

LETCHWORTH.—U.D.C placed contract with G. H. Kempster, Ltd., of Watford, at £1,221, for report and control headquarters. Plans by L. L. Brown, architect, Garve, Croft-la. List of tenders on page 741.

MANCHESTER.—T.C. approved wardens' sector post, and adapting hall to provide accommodation for police department, auxiliary fire service, and wardens' service.

MIDDLETON. — Middleton Building Trades Employers' Association, 16, Clegg-st., Oldham, contractors for nine 48-person shelters in Little Park area; 163 domestic shelters for East Ward; 27 for South Ward, and 89 for North Ward, for T.C. Plans by J. Pollard, B.S.

NEWCASTLE-ON-TYNE. — City Council received sanction to borrow £48,212 for A.R.P. work at schools.

NEWCASTLE-UPON-TYNE.—Contract for basement shelter at Emerson-chams., let to H. Kindred, Roseville, Sunniside, Whickham, Durham. Architects, W. Dixon and Sons, 1, Collingwood-st. Cost, £705.

PRESTON.—T.C. propose public shelters and trenches at Open Market and Starchouse-sq., at £2,100.—T.C. to proceed with domestic surface shelters in yards and houses, etc., Adelphi-st. area, at £17,783. Plans by R. Williams, B.E.

ROWLEY REGIS.—T.C. propose communal surface shelters on 20 sites in borough.

SALFORD.—T.C. to construct 12 public shelters, each to accommodate 48 persons, on Borough, Chapel, Green, Hope, Lord, Orchard, Phœnix, Radford, Rhyl, Shuttleworth, Smith and Windsor streets. Plans by W. A. Walker, B.E.

SEDGLEY.—For shelters at Brookdale Wood-rd., Himley, Burton and Ettymore-rds., for U.D.C., contractors are Hussey, Egan and Pickmere, Ltd., 174, Corporation-st., Birmingham, and Greenley Bros., Sedgley-rd., Wolverhampton. Plans by A. E. Dicks, E.

SKEGNESS. — Lindsey C.C. propose shelters at Cavendish-rd. council infants' school, for 300. Plans by P. W. Birkett (A), County Architect, Lincoln.

SOUTHPORT.—T.C. accepted tenders for shelters: Buck and Hodson, Southport, £144; J. G. Wilkinson, Ltd., Southport, £492, and Brew Bros., Cadishead, Manchester, £154.

SOUTHPORT. — T.C. propose public shelter at Victoria Baths and strengthening two rooms at Botanic Gardens' museum.

STOKE-ON-TRENT.—T.C. received £5,900 loan sanction for trenches, shelters and tunnel.—Provision of further 60 shelters for scholars, approved. Plans by A. Burton, M.I.C.E., City E. and S.—T.C. received £26,200 loan sanction for shelters at council schools.

SUNDERLAND.—E.C. applying for sanction to borrow £54,421 for providing school shelters, etc.

SUNDERLAND.—T. Scrafton and Sons, Ltd., Brook-st., obtained contract for basement shelter at business premises.—Basement shelter to be built at Ditchburns factory, Warren-st. Architects, Matkin and Hawkins, Barclays Bank-chams.

SWINTON.—U.D.C. to proceed with adaptation of clinic as first-aid post, at £660. Plans by H. Goodwin, S.—O. Weaver and Sons, Ltd., Harlington-rd., Mexborough, near Rotherham, contractors, at £949, for domestic surface shelters for U.D.C.

WAKEFIELD.—T.C. propose domestic communal shelters, scheme No. 2, on various sites. Plans by S. Hutton, City E.

WALSALL. — T.C. propose additional shelters, at £1,150.

WASHINGTON.—W. L. Hayton, Washington, at £875, secured contract for 60 domestic shelters for U.D.C. Plans by N. C. Harrison, S.

WORKSOP.—T.C. propose 46 public shelters. Plans by C. O. Allsopp, B.E. and S.

NEW BUILDINGS IN LONDON

BANSTEAD.—Fire Station.—A new fire brigade and ambulance headquarters is to be erected for the U.D.C. Messrs. W. A. Pite, Son and Fairweather, 16, Market-sq., Westerham, are the architects, and the contractors are Messrs. Norman, Wright (Builders), Ltd., Portland House, Portland-rd., S.E.25, at £18,174, in place of the previous tender.

BATTERSEA.—Extension.—Mr. John A. Rosevear, 26, Victoria-st., S.W.1, submitted plans to the B.C. in respect of the erection of an extension to the Battersea Flour Mills.

HENDON.—Premises.—The T.C. recommend the erection of West Hendon day nursery, at £2,550. The plans are by the Borough Surveyor.

HENDON. — Building. — The T.C. approved: Alterations, Bury Farm, Edgwarebury-la., Edgware, for Warden and Fellows of All Souls' College, Oxford, applicant, Done, Hunter and Co.; addition, The Lodge, St. Joseph's College, Lawrence-st., N.W.7, for St. Joseph's College, applicant, J. Childs and Son, Ltd.; alterations, Hendon Hall Hotel, Ashley-la., Hendon, for Hendon Hall Hotel, Ltd., applicant, A. J. Willson and Sons; alterations in store buildings, Deansbrook-rd., Edgware, for Boosey and Hawkes, Ltd., applicant, C. Tavener and Son, Ltd.; ground floor factory extension, Grenville-pl., Mill Hill, for the Rawlplug Co., Ltd., applicant, W. H. Armfield, Ltd., and garage and motor repair shops, Claremont-rd., Cricklewood, for the Express Dairy Co., Ltd., applicant, Oscar Faber.

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender, unless stated to the contrary. The dates at the head of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained. Abbreviations: (A.) for A.R.I.B.A.; B. of E. for Board of Education; B.C. for Borough Council; B.E. for Borough Engineer; B.S. for Borough Surveyor; C. for Clerk; C.B. for County Borough; C.C. for County Council; C.E. for County Engineer; C.S. for County Surveyor; D.S. for District Surveyor; E. for Engineer; E.C. for Education Committee; (F.) for F.R.I.B.A.; (L.) for L.R.I.B.A.; M.W.B. for Metropolitan Water Board; M.H. for Ministry of Health; M.T. for Ministry of Transport; P.C. for Parish Council; R.D.C. for Rural District Council; S. for Surveyor; T.C. for Town Clerk and Town Council; and U.D.C. for Urban District Council.

BUILDING.

JUNE 21.

†**Nottingham T.C.**—Clinic in Glasshouse-st. R. M. Finch, City E. and S. Dep. £2.

†**Wolverhampton C.B.**—Mortuary, New Cross Hospital. B.E. Dep. £2 2s.

JUNE 24.

Wembley T.C.—Trench shelter, High-rd., Wembley; communal domestic surface shelters, One Tree Hill and Wembley Hospital districts, London-rd. and Lyon Park-ave. districts, and Mount Pleasant and Beresford-ave. districts; construction of brick blast walls to various buildings throughout borough. K. Tansley, T.C. Dep. £1 1s. each. (Three separate contracts.)

JUNE 25.

Consett U.D.C.—Brick public shelter for 300 persons at John-st. T. P. Leath, Council Offices.

JUNE 26.

Abram U.D.C.—40 domestic surface shelters. S.

†**Chesterfield T.C.**—Extensions to public abattoir. Houfton and Kington, chartered architects, Chesterfield. Dep. £2 2s.

Croydon C.B.—Twelve public surface shelters to accommodate 1,300 persons and twelve domestic surface shelters to accommodate 642 persons in rear gardens of houses or blocks of flats. B.E. Dep. £1 1s. each.

Downham Market U.D.C.—Surface shelter. A. T. Pallister, S. Dep. £1 1s.

Heywood T.C.—Sub-station. S.

Poulton-le-Fylde U.D.C.—Demolition of Council property rear of Market-pl. S.

Uxbridge U.D.C.—Communal domestic surface shelters. E. E. T. Bolton, E. and S., 263, High-st.

JUNE 27.

Llanelly R.D.C.—Six houses at Trimsaran. E. Morgan, architect, 63, Murray-st. Dep. £2.

Redcar T.C.—216 domestic surface shelters. B.E. and S. Dep. £2.

Wilton T.C.—Concrete yard and erection of a hose drying tower. J. T. David, B.S.

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JUNE 29.

Cowbridge R.D.C.—Public lavatory at St. Athan. Thomas and Morgan and Partners, architects and engineers, 23, Gelliwastad-rd., Pontypridd. Dep. £2 2s.

Mitcham T.C.—265 domestic surface-type shelters. B.E.

Monmouthshire E.C.—School clinic at Crumlin. Colin L. Jones (F), County Hall, Newport. Dep. £5 5s.

JULY 1.

Bromley T.C.—100 domestic shelters. B.E. Dep. £2.

Montgomeryshire E.C.—Cloak room and offices, etc., at Penygloddfa council school, Newtown, and re-decoration at New Church-st. council infants' school, Newtown. County Architect, Newtown. Dep. £2 2s. and £1 1s. each.

JULY 2.

Tiverton R.D.C.—4 houses at Bampton. A. J. Dennis, Sanitary Inspector, 21, St. Peter-st. Dep. £2 2s.

JULY 3.

Deptford B.C.—Communal shelters. B.E. and S.

Porthcawl U.D.C.—Extension of existing filter-house at Ty Coch. John Taylor and Sons, engineers, Caxton House, Westminster, S.W.1. Dep. £2.

Sandbach U.D.C.—Public conveniences adjoining Market Hall. J. R. Price, architect, Council Offices.

JULY 4.

Newcastle-upon-Tyne T.C.—Demolition of about 135 properties in Edward-st. rehousing area, Westgate-rd. City Architect, 18, Cloth Market.

Walton and Weybridge U.D.C.—60 domestic surface shelters. E. A. Lister, E. and S.

JULY 6.

Beckenham T.C.—Heating and engineering work in connection with new A.R.P. service buildings at West Wickham. J. Dove, B.E. and S. Dep. £2.

NO DATE.

Belfast T.C.—Domestic and communal air raid shelters. City Engineer's Dept. (Room 94), City Hall.

Morley T.C.—Shelters at Peel-st. school, Morley, Churwell school and Gelderd-rd. school, Gildersome. B.E. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, HEATING, &c.

JUNE 24.

Scunthorpe.—Painting and distempering downstairs inside Brumby Club.

West Riding C.C.—Internal renovation, Gisburn-rd. and Rainhall-rd. schools, Barnoldswick. H. Marsden, Divisional Clerk, Education Office, Skipton.

JUNE 25.

Birkenhead T.C.—For painting, etc., of exterior of Town Hall and 59, Hamilton-st. B.S.

Birkenhead Corporation.—Painting, etc., of exterior of town hall and rates department, 59, Hamilton-st. B.S.

Edinburgh T.C.—Internal painter work at police headquarters, High-st. City Architect.

Huntingdon and Godmanchester T.C.s.—Painting of lock gates under control of councils on River Ouse. B.S., Town Hall, Huntingdon.

Maltby U.D.C.—Painting 208 council houses, external; recreation ground, Mugglet-la., and recreation ground, Leslie-ave. M. R. Jones, E. and S.

*†**York.**—Installation of electric light and power, Joseph Rowntree Village Trust, New Earswick senior undenominational school, near York. Sec., Education Offices, County Hall, Northallerton.

JUNE 26.

Cumberland Infirmary.—(a) Electrical; (b) heating, engineering, hot water, steam and ventilating services, in connection with new

twin operating theatre unit at infirmary, Carlisle. Ernest Griffiths & Son, consulting engineers, "Kinders," Bromborough. Dep. £5.

Royton U.D.C.—External painting to 106 houses, Scottfield and Royley housing sites. Housing Manager's office, 34, Market-bldgs., Rochdale-rd.

West Riding C.C.—Internal renovations and external painting of schools in Ackworth, Grimethorpe, Shafton, Fitzwilliam, Kinsley, Hemsworth, South Kirkby and South Elmsall districts. C. L. Crossley, Divisional Clerk, 8, St. John's North, Wakefield.

JUNE 27.

Plymouth T.C.—External painting of schools, etc. J. Paton Watson, City E. and S.

West Riding E.C.—Reslating roofs, Barnborough school; also internal renovations and external painting at schools at Mexboro' and Dearne. F. B. Stockdale, Divisional Clerk.

JUNE 28.

Barking T.C.—Heating, etc., for first-aid post and control centre at new town hall. Hoare Lea and Partners, consulting engineers, 158a, Edmund-st., Birmingham, 3. Dep. £2 2s.

Westmorland E.C.—External painting, Kirkby Lonsdale art classroom; repairs and painting Little Strickland council school; and roof ventilator and painting Martindale council school. A. Knewstubb (L.), architect, St. Andrew's-chams., Penrith.

JUNE 29.

Rugby R.D.C.—External painting of 38 council houses, Churchover, Willoughby, and Rugby-rd., Dunchurch. S., 24, Warwick-st.

West Riding E.C.—Painting work at various schools in Hoyland, Ellesfield and Bradfield districts. A. Rayner, Education Office, Orchard-chams., Church-st., Sheffield, 1.

West Riding E.C.—Painting and decorating schools at Armthorpe, Barnby, Bentley, Edlington, Braithwell, Adwick-le-Street, Rossington and Kirk Sandall. A. J. Dempster, divisional clerk, Winchester House, Scot-la., Doncaster.

West Riding E.C.—Painting work at schools. E. B. Nelson, Education Office, Bingley.

Worcester T.C.—External painting and repairs at Hop Market Hotel, The Foregate and Sansome-st. City E., 22, Bridge-st. Dep. £2 2s.

JUNE 30.

West Riding E.C.—Renovation and external painting, Pontefract schools. H. Holmes, Ropergate, Pontefract.

West Riding C.C.—Renovation and painting Gargrave council school and Kettlewell with Starbottom school. H. Marsden, Divisional Clerk, Education Office, Skipton.

JULY 6.

West Riding E.C.—Renovations at various schools. G. E. Nicholson, Orchard-chams., Church-st., Sheffield, 1.

NO DATE.

Holywell.—Painting Seion Congregational Church, near Holywell. P. T. Metcalfe, "Rhiwlas," Carmel, Holywell.

West Riding E.C.—Renovations of Castleford and Normanton schools. M. G. Swaine, divisional clerk, Education Offices, Castleford.

West Riding E.C.—Painting schools at Moss, Brotherton, Beal, Cridling Stubbs, Knottingley and Featherstone. F. Hall, Chapel-st., Knottingley.

West Riding E.C.—Painting and building work at various schools. J. H. Crabtree, divisional clerk, Allan House, Sowerby Bridge.

ENGINEERING, IRON AND STEEL.

JUNE 26.

York T.C.—Laying of approx. 34 lin. yds. of cast iron pipework, construction of concrete outlet bay below water level of cooling pond, and certain alterations to existing pumphouse, River Foss, opposite generating station, Foss Islands-rd. Chas. J. Minter, City E. Dep. £1 1s.

JUNE 28.

Kirkham Urban and Fylde R.D.C.—Sewage disposal works near Kirkham, and provision, laying and jointing of some 4,000 lin. yds. of spun iron pipe sewer, and 376 yds. of similar sewers, together with necessary manholes. H. B. Ward, M.Inst.C.E., Consulting E., 38, Hoghton-st., Southport. Dep. £5.

JUNE 29.

Cliffe Internal Drainage Board.—Concrete tube outfall on piled foundations, provision and fixing of tidal flap, etc., at Hessell Clough, near Cliffe, Selby. Fairbanks and Son, engineers, St. Helens-sq., York. Dep. £2 2s.

JULY 1.

Montgomeryshire E.C.—Collecting tanks and pipe line in connection with water supply to Oakley Park council school. County Architect, Newtown. Dep. £1 1s.

Morpeth U.D.C.—Laying 3,808 lin. yds. of 4-in. and 1,966 lin. yds. of 3-in. spun-iron water mains, complete with valves, hydrants, etc., in parishes of Longhirst and Old Moor. T. T. Watson, Sanitary S., Howard Castle, Dacre-st. Dep. £2 2s.

ROAD, SEWERAGE AND WATER WORKS.

JUNE 24.

Bromley T.C.—Making good existing works in Lakeside-dr. and Rowan-wk. B.E.

Carmarthenshire C.C.—Construction of approaches to Trimsaran Halt railway bridge. T. W. Wishlade, C.S., Wellfield-rd., Carmarthen. Dep. £5.

Wembley T.C.—220 yds. of 18-in. dia. concrete pipe surface water sewer in gardens at rear of Lawrence-cres. Borough Treasurer. Dep. £2 2s.

JUNE 25.

Dorking and Horley R.D.C.—Extension of sewerage system at Salfords. F. E. Traviss, S., "Brookmead," Station-rd.

Wrexham T.C. — Reconstruction and widening of Town Hill. B.E.

JUNE 26.

Martley R.D.C.—Contract No. 1 for Rushwick and Upper Wick sewerage scheme. Willcox, Raikes and Marshall, engineers, 33, Great Charles-st., Birmingham, 3. Dep. £5 5s.

JUNE 27.

Luton T.C.—Final make-up of roads on Leagrave housing estate, off Mayne-av. F. Oliver (A.), B.E. and S. Dep. £2 2s.

NO DATE.

Glanford Brigg R.D.C.—120 yds. of 12-in. dia. open-jointed drain pipes in Broughton. John H. Haiste, Consulting E., Middleton-chams., Lowgate, Hull.

Penzance T.C.—Laying 7,000 yds. of water mains. B.E. Dep. £2 2s.

TO ALL BUILDERS
with
HOUSES FOR SALE
in the MIDLANDS or
WEST OF ENGLAND.

We have an Applicant requiring to purchase, for Investment, blocks of small modern Freehold Houses (preferably, but not essentially, already let) in good residential districts. Semi-detached with Garage space preferred.

Substantial sales already effected for Builders in S.E. England.

Builders interested please communicate with

SAVAGE & CO.,
Surveyors and Estate Agents,
ELTHAM, LONDON, S.E.9.

TRADE NEWS

The Church House, Westminster.

In connection with the list of sub-contractors for this work, which was published in last week's issue of *The Builder*, we are asked to state that the roof lantern lights were supplied by Messrs. Haywards, Ltd.

Pre-cast Concrete Building.

In much of the official building going on all over the country, the place of steel and timber has been taken, particularly for floors and roofs, by factory-made, pre-cast hollow concrete beams, made to a standard size and carried to the job ready for erection. Concrete, Ltd., whose main works are in Leeds and London (Green-lane, Hounslow), have just completed a number of buildings, some of them covering as many as seven acres, in which all the pre-cast floors and roofs are made by the "pneumatic core" process. The floors are manufactured by mass production methods in the factory, and avoid altogether both the need for the erection of shuttering on the site and the time required for the hardening of the concrete when it is used wet. As soon as the floors and roofs are erected the other trades involved can follow up immediately with their part of the work.

The pre-cast method, when used with pneumatic cores, is a very simple process. The cavity in the hollow beams is formed by means of canvas-covered rubber air-bags. These are laid out in rows, inflated to the appropriate size, and the concrete is then poured round them. As soon as the concrete has set, the cores are deflated and withdrawn, and are ready for use again. The cavity formed by them is exact in contour and their use avoids the cost of leaving metal formers or tiles in the slab, thus providing a maximum void and economising in both material and weight.

Pre-cast Concrete Products.

Girling's Ferro-Concrete Co., Ltd., have issued, under the title of "Timber and Steel Shortage Solved," a brochure illustrating by constructional drawings many uses for pre-cast concrete products which normally would be filled by timber or steel, *e.g.*, window and door frames, hollow beam floors, trusses and purlins, concrete shuttering, shelter seats, tables and benches, wheel track units (to replace timber sleeper tracks on building sites), hollow blocks for protective purposes, railway sleepers, etc. This most stimulating little booklet should be of great use to every architect, engineer or builder engaged on any type of construction. A copy may be obtained from the company at Great South-west-road, Feltham, Middlesex.

OFFICIAL NOTIFICATION

Steel Distribution Scheme.

The Ministry of Supply issues the following statement :—

It has been observed from the returns made that a substantial number of orders still on the books of finished steel producers remain unsymbolised, and it is considered by the Iron and Steel Control that sufficient time has been given to all contractors to enable them to obtain the necessary authority from the Departments concerned to use the symbol, reference number and period numbers in respect of each order placed with finished steel producers.

The finished steel producers have, therefore, been advised that if they do not receive the symbol, reference and contract numbers with reference to the orders which they have on their books by June 15, it is proposed to regard these orders as cancelled.

It is essential, therefore, that all firms who have not taken steps to obtain the necessary authority from the Government Departments should do so at once.

CURRENT AND PROPOSED BUILDING WORK*

Bacup.—T.C. approved: Houses, Clarence-st., D. W. Hall, 13, Hargreave-st.

Bewdley.—T.C. approved: Structural alterations, "Hop Pole" inn, Marston, Thompson & Evershed, Ltd., The Brewery, Burton-on-Trent. J. H. Hawkins, architect and surveyor, The Brewery, Burton-on-Trent.

Bromsgrove.—R.D.C. approved: Bungalows, new road off Kidderminster-rd., Haggley, for H. Detheridge & Son, Trinity-st., Old Hill, Dudley.

Bury.—T.C. propose combined clinic and first-aid post. J. Chadwick, B.E.

Clay Cross.—U.D.C. approved: Rebuilding Hippodrome, Broadleys, for Clay Cross Hippodrome Co., Ltd. Architects, Wilcockson & Cutts, 12, Saltergate, Chesterfield.

Darlington.—R.D.C. propose to proceed with water carriage conversion scheme to houses at Heighington. W. Pallister, S.

Dartford.—T.C. to make formal application to M.H. to borrowing £600 for public conveniences, Market-st. Plans passed: Extension of farm buildings, Joyce Green hospital, L.C.C.

Derby.—Brampton Brewery Co., Ltd., Brampton, near Chesterfield, proposes new "Royal Oak" hotel, Stonebroom-la., Shirland. Architects, Wilcockson & Cutts, 12, Saltergate, Chesterfield.—H.M.O.W. proposes emergency hospital. Plans by H.M.O.W., Marine Hydro, Rhyl.

Dukinfield.—T.C. approved: Additions to works for extension of heavy machine shops, D. Adamson & Co., Ltd.; additions to rope works, W. Kenyon & Sons, Ltd.

Exmouth.—U.D.C. received sanction to borrow £14,650 to carry out sea defence works at eastern end of Marine-dr. Scheme approved by Ministry of Shipping.

Gainsborough.—M.H. given permission to proceed with permanent building to replace present iron church of St. Michael's.

Gateshead.—T.C. to extend Shearlegs-rd. depot at £300.

Hanley.—Rev. M. M. Power, P.P. Church of St. George and St. Martin, Birches Head, proposes additional wing to schools.

Hastings.—T.C. approved: Alterations to "Cambridge Hotel," Cambridge-rd., George Beer & Rigden, owners, per J. Thomson.

Hendon.—T.C. recommend £9,000 to be approved and forwarded to M.T., with application to M.H. for sanction to loan for Frith-la. bridge.

Hyde.—Walker & Homfrays, Ltd., Woodside Brewery, Eccles New-rd., Salford, propose structural alterations to "Globe" hotel. Plans by own architect.

Kettering.—T.C. approved: Extensions to works, Dryland-st., for Dalkeith Shoes Co., Ltd., and new works, Cambridge-st., for C. Dobson. Architects, Gotch, Saunders & Surridge, Bank-chams.

Liverpool.—Catholic authorities to proceed with new Church of St. Aloysius, Twig-la., Roby, in lieu of existing temporary church which will be adapted for parish hall. R. V. Smith (A.), architect, 51, Hamilton-sq., Birkenhead.

Mansfield.—T.C. approved: Commercial garage, Sylvester-st., Severn Motor Co. A. Lane and Sons, architects, Leeming-chams., Leeming-st.; addition to works for yarn store, Union-st., for Harwood Cash and Co., Ltd., Lawn Mills.

Middleton.—T.C. approved: Boiler-house, etc., Market-st., Jopson, Ashworth & Edmunds, Ltd., Kidclough Dye-wks. (plans by British Cotton and Wool Dyers' Assn., 22, Cumberland-st., Deansgate, Manchester, 3).

Morecambe and Heysham.—T.C. approved: Flats, Lancaster-rd., H. Vickers, White Lund.

Oswestry.—T.C. proposes public abattoir.

Rowley Regis.—T.C. approved: Works extensions, Old Hill, for E. Partridge (Old Hill), Ltd.; extensions to offices, Cradley Heath, for Midland Iron and Hardware (Cradley Heath), Ltd.; stores and workshop, Cradley Heath, A. E. Chapman & Co.; extensions to works, Tividale, for Norton's (Tividale), Ltd.

Scarborough.—F. Baker, York-pl., prepared plans for additions to "Shakespeare Hotel," St. Helen's-sq., for Scarborough and Whitby Breweries, Ltd.

Seaton Valley.—U.D.C. to submit a modified scheme of improvements to sewerage and sewage disposal works at Cramlington. Engineers, Taylor & Wallin, 1, Saville-pl., Newcastle.

Sheffield.—T.C. approved: Four houses, Lyminster-rd., D. Hurrell; celluloid store, Sheffield Silver Plate and Cutlery Co., Ltd.; alterations, Warren-st., Tempered Spring Co., Ltd., additions, Savile-st., Thos. W. Ward, Ltd., sub-station, Electricity Committee; welding shop, Trent-st., Sheffield Welders, Ltd.; additions, Brightside-la., English Steel Corporation Ltd.; additions and alterations, Holy Trinity Parochial Church Council; machine shop and offices, Dacre-st., Davis Turnbull & Co.; die sinking shops, Bold-st., and Janson-st., English Steel Corporation, Ltd.; workshop, B. Huntsman, Ltd.; workshop additions and air raid shelter, R. E. P. Engineering Co.; alterations, "Truro Tavern." St. Mary's-rd., and Leadmill-rd., Tennant Bros., Ltd.; workshops, store and alterations, Hermitage-st. and Hermitage-la., John May, Ltd.; additions (workshops and store), Duchess-rd., H. M. Blenkorne & Son, Ltd.

Sheffield.—T.C. propose stores, workshops and garages adjoining Kelham-la., and fencing open spaces, playgrounds, etc., Parson Cross estate, at £3,100; public conveniences on Corporation housing estates and at Bowden Housteads Wood, at £2,500; five electricity substations on Parson Cross housing estate.—Health Committee propose installation of electric light, Hollow Meadows institution, at £300.

Stretford.—T.C. approved interior redecoration of Firswood branch library being now proceeded with.—Plans passed: Turbine house extension, for Stretford and District Electricity Board; alterations and additions, Elsinore-rd., E. Boydell & Co., Ltd.; alterations and additions, Elsinore-rd., Wardle Engineering Co., Ltd.

Stroud.—S. to R.D.C. to produce plans for 15 or 20 houses.

Sunderland.—W. and T. R. Milburn, 17, Fawcett-st., architects for improvements to "Clipper Inn," "Albion Inn" and "Three Tuns" hotels, for Vaux and Sons, and to "White House" hotel, for W. B. Reid and Co., of Newcastle.

Sunderland.—T.C. to spend £190 on provision of additional lavatory accommodation at Town Hall.

Warrington.—Greenall, Whitley & Co., Ltd., Wilderspool Brewery, propose extensive alterations to "Noggin" inn at Risley. Plans by Mr. Downes, resident architect, Brewery Offices.

Wednesbury.—Ansell's Brewery Co., Ltd., Aston Brewery, Birmingham, 6, proposes erection of "George" Inn, Union-st. and Upper High-st. Jeffries and Shipley, architects, Kingscourt, Bridge-st., Walsall.

Woolwich.—Ministry of Home Security approved £259 for female accommodation at canteens.—Plans passed: G. Clay, 198, Parrock-st., Gravesend, on behalf of Farr, Smith & Co., additions, New Ferry-wharf, Woolwich High-st.

York.—T.C. approved: Tadcaster Tower Brewery Co., Ltd., additions, Castle Hotel, Clifford-st.; Rowntree & Co., Ltd., additions, Haxby-rd. works; Trustees of Baptist Church, additions, Priory-st.

* See also List of Contracts Open.

** **In these lists every care is taken to ensure that information given is accurate and up to date, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced.**

BUILDING ILLUSTRATED

COUNTY OFFICES EXTENSION, SHREWSBURY.

For this work (designed by the County Architect, Mr. A. G. Chant, F.R.I.B.A.), the general contractors were Messrs. E. Crowder, Ltd., South-road, Handsworth, Birmingham, 19. Reinforced concrete was by the Trussed Concrete Steel Co., Ltd. Sub-contractors engaged were: Bricks, Blockleys, Ltd., Ruabon Brick Co., Ltd., T. Greenwood and Sons, and Overton Brick and Tile Co., Ltd.; glazed bricks, Lilleshall Co., Ltd.; stone, Grinshill Stone Quarries, Ltd.; metal windows, H. Hope and Sons, Ltd.; glass domes, Haywards, Ltd.; marble, F. G. White and Co., Ltd.; sanitary fittings, J. Duckett and Sons, Ltd., and Building Material Supply Stores, Ltd.; wood floors, Hollis Bros. and Co., Ltd., and J. Gerrard and Sons, Ltd.; cork floors, Cork Insulation Co., Ltd., and Korkoid Decorative Floors; wall tiling, Robertsons (Birmingham), Ltd.; pavement lights, Luxfer, Ltd.; ironwork, H. and E. Davies, Bayliss, Jones and Bayliss, Ltd., and E. Davies; asphalt roofs and pavings, Engert and Rolfe, Ltd.; door and window furniture, Wing and Webb, Ltd., F. P. Waltho, Ltd., and N. F. Ramsay and Co., Ltd.; steel roof trusses, Banister, Walton and Co., Ltd.; special plaster for ceiling heating in committee rooms, W. A. Telling, Ltd.; roof tiling, E. H. Smith (Westhaven), Ltd.; flush doors, Venesta, Ltd.; stone fireplaces, Gloucester Stone Co., Ltd.; fire services, S. Dixon and Son, Ltd.; lifts, Marryat and Scott, Ltd., and J. and E. Hall, Ltd.; bronze handrail, Conrad, Parlanti, Ltd.; heating, E. Thomas and Co., Scull Bros. (Contractors), Ltd., and Benham and Sons, Ltd.; furniture and steel, Sankey-Sheldon (Harris and Sheldon), Ltd.; wood, Seco, Ltd., E. Crowder, Ltd., The Aston Cabinet Co., Ltd., and H. Addison and Co., Ltd.; electrical installation, H. J. Gornall and Co.; loft ladder, Loft Ladders, Ltd.; cycle racks, Parker, Winder and Achurch, Ltd.; tarpaving, E. and E. Rogers; linoleum, A. Evans and R. Maddox and Co., Ltd.; lavatory fittings, Adams and Co., Ltd.; committee room curtains, W. H. Smout and Son.; dark blinds, etc., R. Maddox and Co., Ltd., W. H. Smout and Son, T. W. Cole and Sons, and Della Porta's, Ltd.

Sculptures were by Mr. A. Bridgewater, A.R.B.S.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st JUNE, 1940

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors]

	Crafts-men.	Lab-ourers.
Aberavon	1/9	1/4½
Aberdare	1/9	1/4½
Abergavenny	1/9	1/4½
Abingdon	1/7½	1/3
Accrington	1/9	1/4½
Aldeburgh	1/5½	1/1½
Aldershot	1/7½	1/3
Alfreton	1/9	1/4½
Alnwick	1/8½	1/3½
Altrincham	1/9	1/4½
Amble	1/8½	1/3½
Amersham	1/7½	1/3
Ammanford	1/9	1/4½
Andover	1/7	1/2½
Ardingley	1/7	1/2½
Arundel	1/7	1/2½
Ascot	1/7	1/2½
Ashby-de-la-Zouch	1/9	1/4½
Ashford (Kent)	1/7	1/2½
Ashford (Middlesex)	1/9	1/4½
Ashington	1/8½	1/3½
Ashtead	1/9	1/4½
Ashton-under-Lyne	1/9	1/4½
Aylesbury	1/7	1/2½
Aylsham	1/6	1/2
Bagshot	1/7	1/2½
Banbury	1/7	1/2½
Barnsley	1/9	1/4½
Barnstaple	1/7	1/2½
Barrow-in-Furness	1/9	1/4½
Barry	1/9	1/4½
Basingstoke	1/7	1/2½
Bath	1/8½	1/3½
Batley	1/9	1/4½
Beaconsfield	1/7½	1/3
Beccles	1/5½	1/1½
Bedford	1/8½	1/3½
Berkhamsted	1/7	1/2½
Berwick	1/8½	1/3½
Beverley	1/9	1/4½
Bexhill-on-Sea	1/7½	1/3
Bideford	1/7	1/2½
Biggleswade	1/7	1/2½
Billericay	1/6½	1/2½
Birchington	1/7	1/2½
Birkenhead	‡§1/11	¶*
Birmingham†	1/9	1/4½
Bishop Auckland	1/9	1/4½
Bishops Stortford	1/8	1/3½
Blackburn	1/9	1/4½
Blackpool	1/9	1/4½
Blyth	1/9	1/4½
Bognor Regis	1/7	1/2½
Bolton	1/9	1/4½
Bournemouth	1/8	1/3½
Bracknell	1/7	1/2½
Bradford	1/9	1/4½
Bradford-on-Avon	1/6	1/2
Braintree	1/7	1/2½
Brentwood	1/8½	1/3½
Bridgwater	1/7½	1/3
Bridlington	1/8½	1/3½
Brighouse	1/9	1/4½
Brighton	1/8	1/3½
Bristol	1/9	1/4½
Broadstairs	1/7	1/2½
Bromsgrove	1/8½	1/3½
Buckley	1/9	1/4½
Bungay	1/5	1/1½
Burnham-on-Crouch	1/5½	1/1½
Burnley	1/9	1/4½
Burslem	1/9	1/4½
Burton-on-Trent	1/9	1/4½
Bury	1/9	1/4½
Bury St. Edmunds	1/6½	1/2½
Buxton	1/8½	1/3½
Byfleet	1/7½	1/3
Cambridge	1/9	1/4½
Canterbury	1/7	1/2½
Cardiff	1/9	1/4½
Carlisle	1/9	1/4½
Carnforth	1/9	1/4½
Castleford	1/9	1/4½
Caterham	1/9	1/4½
Chard	1/6	1/2
Chatham	1/8	1/3½
Chelmsford	1/8½	1/3½
Cheltenham	1/8	1/3½
Chepstow	1/8½	1/3½
Chertsey	1/8	1/3½
Chester	1/9	1/4½
Chesterfield	1/9	1/4½
Chichester	1/7	1/2½
Chorley	1/9	1/4½
Cirencester	1/6½	1/2½
Clacton	1/7	1/2½
Cleveleys	1/9	1/4½
Clitheroe	1/9	1/4½
Cobham (Surrey)	1/8	1/3½
Colchester	1/8½	1/3½
Colwyn Bay	1/8	1/3½
Congleton	1/8½	1/3½
Coventry	1/9	1/4½
Cranbrook	1/7	1/2½
Cranleigh	1/7	1/2½
Crawley	1/7	1/2½
Crewe	1/8½	1/3½
Cromer	1/6	1/2
Crowborough	1/7	1/2½
Cuckfield	1/7	1/2½
Darlington	1/9	1/4½
Darwen	1/9	1/4½
Daventry	1/7½	1/3
Deal	1/7	1/2½
Denbigh	1/8	1/3½
Derby	1/9	1/4½
Devizes	1/6	1/2
Dewsbury	1/9	1/4½
Didcot	1/7	1/2½
Diss	1/5½	1/1½
Doncaster	1/9	1/4½
Dorchester	1/6½	1/2½
Dorking	1/7½	1/3
Dover	1/7	1/2½
Dovercourt	1/7	1/2½
Driffield	1/7½	1/3
Droitwich	1/8½	1/3½
Dudley	1/9	1/4½
Dunstable	1/7½	1/3
Durham City	1/9	1/4½
Eastbourne	1/8	1/3½
E. Glam. (Mon. Val.)	1/9	1/4½
East Grinstead	1/7	1/2½
Edenbridge	1/7	1/2½
Ely	1/6	1/2
Epping	1/9	1/4½
Exeter	1/8½	1/3½
Exmouth	1/7½	1/3
Fakenham	1/6	1/2
Falmouth	1/7½	1/3
Fareham	1/8	1/3½
Faversham	1/7	1/2½
Felixstowe	1/8	1/3½
Filey	1/7½	1/3
Fleetwood	1/9	1/4½
Flint	1/9	1/4½
Folkestone	1/7	1/2½
Frinton-on-Sea	1/7	1/2½
Frome	1/6	1/2
Gainsborough	1/8	1/3½
Gateshead	1/9	1/4½
Gillingham (Kent)	1/8	1/3½
Glossop	1/9	1/4½
Gloucester	1/8½	1/3½
Godalming	1/7	1/2½
Goole	1/9	1/4½
Gosport	1/8½	1/3½
Grantham	1/8	1/3½
Gravesend	1/8½	1/3½
Great Yarmouth	1/7	1/2½
Grimsby	1/9	1/4½
Guildford	1/7	1/2½
Guilsborough	1/7½	1/3
Halifax	1/9	1/4½
Hanley	1/9	1/4½
Harpenden	1/8	1/3½
Harrogate	1/9	1/4½
Hartlepools	1/9	1/4½
Harwich	1/7	1/2½
Haslemere	1/7	1/2½
Hastings	1/7	1/2½
Hatfield	1/8½	1/3½
Haywards Heath	1/7	1/2½
Hednesford	1/8½	1/3½
Hemel Hempstead	1/8	1/3½
Henley-on-Thames	1/7	1/2½
Hereford	1/7	1/2½
Herne Bay	1/7	1/2½
Hertford	1/8½	1/3½
Heysham	1/9	1/4½
Hitchin	1/8	1/3½
Hoddesdon	1/8½	1/3½
Holt (Norfolk)	1/5½	1/1½
Horley	1/7	1/2½
Horsham	1/7	1/2½
Horwich	1/9	1/4½
Huddersfield	1/9	1/4½
Hull	1/9	1/4½
Hunstanton	1/6	1/2
Huntingdon	1/6½	1/2½
Ilfracombe	1/7	1/2½
Ingatestone	1/7½	1/3
Ipswich	1/8½	1/3½
Isle of Thanet	1/7	1/2½
Isle of Wight	1/6½	1/2½
Keighley	1/9	1/4½
Kenilworth	1/9	1/4½
Kettering	1/9	1/4½
Kidderminster	1/8½	1/3½
King's Lynn	1/7	1/2½
Kirkham	1/9	1/4½
Knowle	1/8½	1/3½
Lancaster	1/9	1/4½
Leamington	1/9	1/4½
Leatherhead	1/8	1/3½
Leeds	1/9	1/4½
Leicester	1/9	1/4½
Leighton Buzzard	1/6	1/2
Letchworth	1/8	1/3½
Lewes	1/7	1/2½
Lichfield	1/8	1/3½
Lincoln	1/9	1/4½
Littlehampton	1/7	1/2½
Liverpool	‡§1/11	¶
Llandudno	1/8	1/3½
Llanelly	1/9	1/4½
London—		
12m. radius	*1/10½	1/5½
12-15 m. radius	*1/10	1/5
Long Eaton	1/9	1/4½
Longton	1/9	1/4½
Loughborough	1/9	1/4½
Louth	1/7½	1/3
Lowestoft	1/7	1/2½
Luton	1/8½	1/3½
Macclesfield	1/8½	1/3½
Maidenhead	1/8	1/3½
Maidstone	1/7½	1/3
Malvern	1/7½	1/3
Manchester	1/9	1/4½
Manningtree	1/6	1/2
Mansfield	1/9	1/4½
March	1/6	1/2
Margate	1/7	1/2½
Market Harborough	1/8	1/3½
Matlock	1/7½	1/3
Melton Constable	1/5½	1/1½
Melton Mowbray	1/8	1/3½
Merthyr	1/9	1/4½
Middlesbrough	1/9	1/4½
Middleton	1/9	1/4½
Middlewich	1/8½	1/3½
Milford Haven	1/7½	1/3
Morecambe	1/9	1/4½
Morley	1/9	1/4½
Mundesley	1/6	1/2
Nantwich	1/8½	1/3½
Nelson	1/9	1/4½
Newark-on-Trent	1/8½	1/3½
Newbury	1/7	1/2½
Newcastle-on-Tyne	1/9	1/4½
Newcastle-u.-Lyme	1/9	1/4½
New Forest	1/7	1/2½
Newmarket	1/7	1/2½
Newport, Mon.	1/9	1/4½
Newport Pagnell	1/7	1/2½
Northampton	1/9	1/4½
Norwich	1/9	1/4½
Nottingham	1/9	1/4½
Nuneaton	1/9	1/4½
Oakham	1/7½	1/3
Oldham	1/9	1/4½
Ormskirk	1/9	1/4½
Oxford	1/8½	1/3½
Oxted	1/7½	1/3
Paignton	1/8½	1/3½
Peterborough	1/8½	1/3½
Plymouth	1/9	1/4½
Pontefract	1/9	1/4½
Pontypridd	1/9	1/4½
Port Talbot	1/9	1/4½
Portsmouth	1/8½	1/3½
Preston	1/9	1/4½
Pulborough	1/7	1/2½
Ramsgate	1/7	1/2½
Reading	1/8½	1/3½
Redditch	1/8½	1/3½
Redhill	1/7½	1/3
Ripon	1/7½	1/3
Rochdale	1/9	1/4½
Rochester	1/8	1/3½
Rugby	1/9	1/4½
Saffron Walden	1/6	1/2
St. Albans	1/8½	1/3½
St. Helens	1/9	1/4½
St. Neots	1/6½	1/2½
Salisbury City	1/6½	1/2½
Salisbury Plain	1/8	1/3½
Sawbridgeworth	1/7½	1/3
Saxmundham	1/5½	1/1½
Scarborough	1/8½	1/3½
Scunthorpe	1/9	1/4½
Selby	1/9	1/4½
Sevenoaks	1/7½	1/3
Sheerness	1/7	1/2½
Sheffield	1/9	1/4½
Shipley	1/9	1/4½
Shoeburyness	1/8½	1/3½
Shoreham	1/8	1/3½
Shrewsbury	1/8½	1/3½
Sittingbourne	1/7	1/2½
Skegness	1/8	1/3½
Sleaford	1/7½	1/3
Slough	1/8	1/3½
Southampton	1/8½	1/3½
Southend-on-Sea	1/8½	1/3½
Southport	1/9	1/4½
South Shields	1/9	1/4½
Spalding	1/7	1/2½
Stafford	1/8½	1/3½
Staines	1/8	1/3½
Stamford	1/8	1/3½
Stevenage	1/8	1/3½
Stockport	1/9	1/4½
Stockton-on-Tees	1/9	1/4½
Stoke-on-Trent	1/9	1/4½
Stourbridge	1/9	1/4½
Stourport	1/8½	1/3½
Stowmarket	1/6	1/2
Stratford-on-Avon	1/8	1/3½
Stroud	1/8	1/3½
Sunderland	1/9	1/4½
Sutton Coldfield	1/9	1/4½
Swaffham	1/5½	1/1½
Swanage	1/7	1/2½
Swansea	1/9	1/4½
Swindon	1/8½	1/3
Tamworth	1/7½	1/3½
Taunton	1/7½	1/3
Tenterden	1/7	1/2½
Thames Haven	1/9	1/4½
Thetford	1/6½	1/2½
Thorpe Bay	1/8½	1/3½
Todmorden	1/9	1/4½
Tonbridge	1/7½	1/3
Torquay	1/8½	1/3½
Totnes	1/7	1/2½
Trowbridge	1/6	1/2
Truro	1/6½	1/2½
Tunbridge Wells	1/7½	1/3
Uppingham	1/7½	1/3
Uttoxeter	1/7½	1/3
Wakefield	1/9	1/4½
Walsall	1/9	1/4½
Walsden	1/9	1/4½
Walton-on-Naze	1/7	1/2½
Ware	1/8½	1/3½
Warminster	1/6	1/2
Warrington	1/9	1/4½
Warwick	1/9	1/4½
Wellingborough	1/8½	1/3½
Welwyn	1/8	1/3½
Welwyn Gar. City	1/9	1/4½
Wells (Norfolk)	1/5½	1/1½
West Bromwich	1/9	1/4½
Westcliff-on-Sea	1/8½	1/3½
Weston-super-Mare	1/8	1/3½
Weybridge	1/8	1/3½
Weymouth	1/7	1/2½
Whitby	1/8	1/3½
Whitstable	1/7	1/2½
Widnes	1/9	1/4½
Wigan	1/9	1/4½
Wigton	1/7½	1/3
Willington	1/9	1/4½
Wilmslow	1/9	1/4½
Winchester	1/7½	1/3
Windermere	1/7½	1/3
Windsor	1/8	1/3½
Wisbech	1/6½	1/2½
Witham	1/7	1/2½
Woking	1/7½	1/3
Wokingham	1/7	1/2½
Wolverhampton	1/9	1/4½
Woodbridge	1/6½	1/2½
Worcester	1/8½	1/3½
Workington	1/7½	1/3
Worksop	1/8½	1/3½
Worthing	1/7	1/2½
Wrexham	1/8½	1/3½
Wroxham	1/6½	1/2½
Wycombe	1/8	1/3½
Wymondham	1/6	1/2
Yeovil	1/7½	1/3
York	1/9	1/4½

* Painters 1d. less than other Craftsmen. † Plus 2d. per working day. ‡ Plasterers 1/11½.
¶ Tradesman's Labourers 1/5½. Navvies and General Labourers 1/4½.
§ Joiners, Plumbers, Bricklayers, Tilers and Masons receive 2/- per week or 4d. per day Tool Money.

For Building Trade Wages in Scotland, see page 740

PRICES CURRENT OF MATERIALS *

Note: Owing to the exceptional circumstances which prevail at the present time prices of materials should be confirmed by inquiry. The prices for soft woods are for cash on delivery, and are subject to adjustment when the increased price of £22 per standard for national released stocks is finally fixed.

At present linseed oil and genuine spirits of turpentine can only be supplied in cans in small quantities.

BRICKS, &c.

Delivered to site, City and Central Area, Full Lorry Loads. £ s. d.
Best Stocks 4 18 0
Second Hard Stocks 4 11 0

Per 1,000. Delivered at London Goods Stations.

2½ in. Phorpres.	King's Cross Station. per 1,000. s. d.	To sites in W.C. District. per 1,000 s. d.
Pressed bricks	46 3	50 6
Cellular bricks	46 3	50 6
Keyed bricks	48 3	52 6
Cellular Keyed bricks	48 3	52 6
Rustic bricks	*66 3	*70 6
Cellular Rustic bricks	*66 3	*70 6
Single Bullnose	64 3	68 6
White bricks	*66 3	*70 6
Sandfaced bricks	—	75 6

* Subject to a special discount of 2s. per 1,000 ft. accompanied by order for Pressed. £ s. d.
White Midhurst Facing Bricks (delivered London site) 3 12 6
Best blue Pressed Staffs. (London Stns.) 8 18 0
Do. Bullnose (London Stns.) 9 8 0
Blue Wire Cuts (London Stns.) 7 15 6
Best Stourbridge Fire Brick (London Stns.):—
2½ in. ..... 8 0 0 3 in. 9 15 0

GLAZED BRICKS. (London Stns.)

Best White Ivory and Salt Glazed Stretcher	26 0 0	D'ble Str'tch'rs	34 10 0
		D'ble Headers	31 10 0
		One side & two ends	35 10 0
Headers	25 10 0	Two sides & one end	36 10 0
Quoins, Bullnose and 4½ in. Flats	32 10 0	Splays and Squints	34 0 0

Second Quality, £2 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

"PHORPRES" HOLLOW PARTITION BLOCKS.

2" per yd. sup.	2 3	3" per yd. sup.	2 9
2½ " "	2 6	4" " "	3 1

CLINKER CONCRETE.

2" per yd. sup.	1 6	3" per yd. sup.	2 0
2½ " "	1 8	4" " "	2 4

CRANHAM TERRA COTTA.

2" per yd. sup.	3 0	3" per yd. sup.	3 8
2½ " "	3 6	4" " "	4 7

HEMPSTEAD—KEYED TWO SIDES.

12" x 9" x 2"	2 6	12" x 9" x 3"	3 0
12" x 9" x 2½"	2 9	12" x 9" x 4"	3 9

Per yard super d/d. Free on site, London.

SAND.

Thames Ballast	7	9 per yd.	delivered 2 miles radius Paddington.
Pit Ballast	7	3 " "	
Pit Sand	9	9 " "	
Washed Sand	10	9 " "	
¾ in. Shingle	8	0 " "	
¾in. Broken Brick	12	0 " "	
Pan Breeze	8	3 " "	

CEMENT.

Best British Portland Cement. Standard Specification delivered London Area. £ s. d.
4 ton loads and upwards site ..... Per ton 2 4 6
1 ton to 4 tons site 2 7 6
Alongside Vauxhall in 80 ton lots 2 2 0
" Ferrocrete " Rapid Hardening Cement—
4 ton loads and upwards site 2 10 6
1 ton to 4 tons site 2 13 6
Alongside Vauxhall in 80 ton lots 2 8 0
Stored in Reserved Bins at works. 1/6 per ton extra.
" Aquacrete " Water Repellent, " Blue Circle " cement, 30/- per ton extra or ordinary " Blue Circle " prices.
" Colorcrete " Nos. 1 and 2. Coloured Rapid Hardening Portland Cement 3 14 6
" Colorcrete " not rapid hardening, according to colour, from £7 to £15 10s. per ton.
" Snowcrete " White Portland Cement 9 5 0
Super Cement (Waterproof) 3 14 6
NOTE.—Paper bags will be charged at the rate of 5/- nett per ton. Jute sacks charged 1s. 9d. nett each and 1/6 nett each allowed if returned to works within two weeks, in good condition.
Carriage will be paid by makers on returned empty jute sacks.
Roman Cement £6 15 Keene's Cement, White £5 17 6
Parian Cement 5 10 " " Pink 5 12 6
Cementone Colours for cement according to tints per cwt. from £2 16s. 0d.

PLASTER.

	£ s. d.		£ s. d.
Coarse, Pink	3 6 0	Sirapite, Coarse	3 10 0
" White	3 18 0	" Finish	3 18 0
Pioneer	3 10 6		
Super Carbo	2 7 6	4-ton loads and over London Area, paper bags free.	
Carbo Setting	2 12 6		
Best Ground Blue Lias Lime	1 17 6	Grey Stone Lime	2 2 0
		Chalk Lime	2 2 0
Granite Chippings	1 5 0	Hair per cwt.	2 7 6

NOTE.—Sacks are charged 1s. 9d. each, and credited 1s. 6d., if returned in good condition within three months, carriage paid.
Stourbridge Fireclay in sacks 37s. per ton at rly. dep.

STONE.

BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube ..... s. d. 2 11½
BEER STONE—RANDOM BLOCK—
Free on rail at Seaton Station. per ft. cube 2 3
Delivered free on rail Nine Elms, S.R. " 3 1½
Selected approximate size one way, 1d. per cubic ft. extra, selected approximately three sizes or for special work, 3d. per cubic ft. extra.

PORTLAND STONE— s. d.
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube 4 6
Do. do. delivered on road waggons as above stations, per ft. cube 4 6
White basebed, 3d. per ft. cube extra.
NOTE.—1d. per ft. cube extra for every ft. over 20 ft. *average* and ¼d. beyond 30 ft.
HOPTON-WOOD STONE—
F.O.R. Quarries, Wirksworth, Derbyshire, Random blocks from 10 ft. and over P.ft.cb. 14 0
Sawn two sides 22 6
HOPTON-WOOD STONE—
Sawn three or four sides 27 9
YORK STONE, BLUE—*Robin Hood Quality*.
Delivered at any Goods Station, London.
6 in. sawn two sides landings to sizes (under 30 ft. super) ..... per ft. super 5 0
6 in. rubbed two sides, ditto .... " 5 6
3 in. sawn two sides slabs (random sizes) ..... " 2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) (paving) ..... " 1 6½
1½ in. to 2 in., ditto ..... " 1 3½
HARD YORK—
Delivered at any Goods Station, London.
Scrappled random blocks ..... per ft. cube 6 3
6 in. sawn two sides landings to sizes (under 40 ft. super) ..... per ft. super 5 1½
6 in. rubbed two sides, ditto .... " 6 1½
4 in. sawn two sides slabs (random sizes) ..... " 3 1½
3 in. ditto ditto ..... " 2 5
2 in. self-faced random flags ..... Per yd. super 7 6

CAST STONE.

Delivered in London are in full van loads, per ft. cube: Plain, 7s. 6d. Moulded, 8s. 6d. Sills, 10s. 0d.

HARD WOOD.

1 INCH AND UP THICK.

Average price for prime quality.	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 17 0
Dry American and/or Japanese Figured Oak, per ft. cube ..... 10 6 to	0 13 0
Dry American and/or Japanese plain Oak, per ft. cube	0 11 6
Dry sq. edged Honduras Mahogany, per ft. cube	0 15 0
Dry log-cut Honduras Mahogany, per ft. cube ..... 12 6 to	0 16 0
Dry Cuba Mahogany, per ft. cube	0 18 0
Dry Teak, per ft. cube	0 14 0
Dry American Whitewood, per ft. cube	0 10 6
Dry Australian Walnut, per ft. cube	0 19 0
Dry Queensland Silky Oak, per ft. cube	0 12 6
Dry African Mahogany, per ft. cube	0 10 0
Dry African Whitewood, per ft. cube	0 8 0
Dry English Wainscot Oak, per ft. cube	0 16 0
Best Scotch Glue, per cwt.	3 0 0
Liquid Glue, per cwt. ..... 4 7 0 to	5 10 0

SOFT WOOD.

MERCHANTABLE BRITISH COLUMBIAN PINE.

	Minimum. £ s. d.	Maximum. £ s. d.
Scantlings in imported sizes, 2in. by 3in. to 4in. by 11in.	43 10 0	53 0 0

Having secured the Contract— What about the Steel Scaffolding!

For the lowest Prices apply to the Oldest Firm in The Scaffolding Trade.

STEPHENS & CARTER LTD.

The British Steel Scaffolding Co.

731-761, HARROW RD., N.W.10.

Telephone No. Ladbroke 1191 (6 lines).

PLANED BOARDS.

PRIME CLEAR BRITISH COLUMBIAN PINE.

	Per standard. £ s. d.
1in. by 11in. } 1in. by 9in. }	67 10 0
	Per square. s. d.
1in. plain edge flooring	49 0
1¼in. ditto	62 6
1in. tongued and grooved	50 0
1¼in. ditto	63 6

MATCHING.

	Per square. s. d.
⅝in.	31 6
¾in.	37 6
1in.	50 0

SLATES.

First quality slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12	31 13 6	18 by 10	16 15 0
22 by 12	26 12 0	18 by 9	15 7 6
22 by 11	23 18 6	16 by 10	14 11 6
20 by 12	23 8 0	16 by 8	11 10 0
20 by 10	21 0 0		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons. ..... Per 1,000 f.o.r. London

Best machine-made tiles from Broseley or Staffordshire district	£4 10 0
Ditto hand-made ditto	5 7 6
Ornamental ditto	5 12 6
Hip and valley tiles (per dozen) Hand-made	0 9 0
Machine-made	0 8 6

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

R.S. Joists, cut and fitted	£18 0 0
Plain Compound Girders	20 10 0
" Stanchions	23 0 0
In Roof Work	27 10 0

NOTE.—These prices are for standard pieces and not special pieces of an awkward nature.
MILD STEEL ROUNDS.—To London Stations, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	18 10 0	⅝ in. to ½ in.	17 0 0
⅛ in.	17 10 0	⅝ in. to 2½ in.	16 10 0

WROUGHT-IRON TUBES AND FITTINGS—
Deliveries from works.
Deliveries from London stock further 2½% gross.

	Tubes and Tubulars. ½"–6" %	¼"–⅜" %	Fittings. Fig. 10–24. ½"–2" %	Flanges. ½"–2" %	2½"–6" %
Gas	56	51	49	52½	59
Water	51½	46½	45½	47½	55½
Steam	48½	43½	41½	42½	51½
Galv. gas.	44½	39½	40½	41½	50½
Galv. water	38½	33½	36½	36½	46½
Galv. steam	33½	28½	32½	31½	42½

Fittings Fig. Nos. 25/34. 5% less gross discount.

C.I. HALF-ROUND GUTTERS—London Prices ex Works.

per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/3¼	1/0½	4d.
3½ in.	1/5	1/2½	4d.
4 in.	1/5	1/3½	5½d.
4½ in.	1/6	1/6	6½d.
5 in.	1/9½	1/7½	7½d.

O.G. GUTTERS.

3 in.	1/8¼	1/5½	4½d.
3½ in.	1/10½	1/5½	5½d.
4 in.	1/10½	1/6	6½d.
4½ in.	1/11½	1/9	7½d.
5 in.	2/5½	2/-	9d.

RAIN WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches. stock angles.
2 in.	1/11½	1/3½	1/11½
2½ in.	2/0½	1/6	2/3½
3 in.	2/5	1/10½	2/9½
3½ in.	2/10½	2/3	3/3
4 in.	3/3½	2/8½	3/11½

NETT PRICES.
Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices, ex Stock.

	Pipe.	Bends, stock angle.	Branches. stock angles.
2 in. per yd. in 6 fts.	3/3½	2/3½	2/9½
2½ in. "	3/11½	2/6½	3/6
3 in. "	4/2½	2/9½	4/2½
3½ in. "	4/3½	3/6	4/10½
4 in. "	4/8½	3/11½	5/7½

L.C.C. COATED DRAIN PIPES.—London Prices, ex Stock.

	Pipe.	Bends, stock angles.	Branches. stock angles.
3in. per yd. in 9 ft. lengths cwt. qr. lbs.	5/1	5/11½	9/5½
4 in. " 1 1 20	7/6	6/9	11/10½
5 in. " 1 2 22	9/1	12/2	18/5
6 in. " 2 0 6	10/9	14/0½	23/0

Gaskin for jointing 65/- per cwt.

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information. Prices are subject to 2½ per cent. cash discount.

PRICES CURRENT OF MATERIALS—(*contd.*)

	Per ton basis in London. £ s. d.		£ s. d.
IRON.—Staffordshire Crown, Merchant quality	14 0 0	to	16 0 0
IRON—Staffordshire Marked Bars	17 5 0	to	19 5 0
Mild Steel Bars	15 17 6	to	17 7 6
Mild Steel Hoops	17 12 6	to	19 2 6

Ex Merchant's Stock, per ton (two-ton lots).

	£ s. d.		£ s. d.
Soft Steel Sheets, C.R. and C.A.—			
20 gauge	19 12 6		
24 gauge	19 17 6		
26 gauge	20 12 6		
Galvanised Corrugated Sheets, 6 ft. to 9 ft.—			
20 gauge	20 17 6		
24 gauge	21 7 6		
26 gauge	22 12 6		
Galvanised Flat Sheets, C.R and C.A.—			
20 gauge	22 7 6		
24 gauge	22 17 6		
26 gauge	24 2 6		

Per ton.

	£ s. d.		£ s. d.
Cut Nails, 3 in. and up	22 5 0	to	23 15 0

ALL NETT.

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

		s. d.
Seamless Copper tubes (basis)	per lb.	1 1
Strong sheet	,,	1 3
Thin	,,	1 4
Copper nails	,,	1 3
Copper wire	,,	1 3

PLUMBERS' BRASS WORK.

Delivered in London.
Stamped by Met. Water Board.

CRUTCH HEAD SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in.	¾ in.
29/-	45/- per doz.

CHROMIUM PLATED TOILET SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in.	¾ in.
40/—	59/- per doz.

SCREW DOWN STOP COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
31/-	44/6	75/-	175/-	250/-	396/- per doz.

SCREW DOWN STOP COCKS WITH TWO UNIONS FOR LEAD.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
42/6	65/-	102/-	195/-	210/-	510/- per doz.

DOUBLE NET BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	9/-	14/-	24/-	37/6	54/- per doz.

HEAVY CROYDON BALL VALVES.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
33/6	55/6	85/-	165/-	237/- per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
9/-	11/-	16/6	29/-	42/-	45/- per doz

BRASS FERRULES OF SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
9/6	11/6	20/6	26/-	37/- per doz.

DRAWN LEAD TRAPS WITH BRASS CLEANING SCREWS.

	1¼ in.	1½ in.	2 in.	3 in.
8 lb. Lead P. ..	17/6	23/-	32/6	66/6 per doz.
8 lb. Lead S. ..	21/6	27/6	39/6	73/- per doz.

SOLDER.—Plumbers, 1/2. Tinmen's, 1/4. Blowpipe, 1/6 per lb.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil, in drums	per gallon	0 5 4
Boiled ,, ,, in drums	,,	0 5 7
Turpentine, in drums (10 gals.)	,,	0 5 3
Genuine Ground English White Lead, per ton (In not less than 5-cwt. casks).		61 0 0

Extra for 1-cwt. kegs over 5-cwt. casks is 2/9 cwt.

GENUINE WHITE LEAD PAINT

"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14 lb. tins) not less than 5-cwt. lots

£ s. d.
per ton delivered 83 10 0
Red Lead. Dry (packages extra) .. per ton 52 0 0
Best Linseed Oil Putty (1 ton lots) per cwt. 0 17 1½
Size. XD quality ..... fkn. 0 3 6

Turpentine substitute can be obtained and prices vary according to the quality from 2/9 gallon upwards.

VARNISHES, &c.

		Per gallon.
Oak Varnish	Outside	0 14 0
Fine do.	,,	0 16 0
Fine Copal	,,	0 18 0
Pale Copal	,,	1 0 0
Pale Opal Carriage	,,	1 4 0
Best do.	,,	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	,,	0 18 0
Fine Copal Cabinet	,,	1 2 0
Fine Copal Flatting	,,	1 0 0
Hard Drying Oak	,,	0 18 0
Fine Hard Drying Oak	,,	0 19 6
Fine Copal Varnish	,,	1 0 6
Pale do.	,,	1 12 0
Best do.	,,	1 2 6
Best Japan Gold Size		1 12 6
Best Black Japan		0 10 0
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 7 6
Berlin Black		0 14 0
Knotting (patent)		0 15 0
French and Brush Polish		0 12 0
Liquid Dryers in Terebene		0 9 0
Cuirass Black Enamel		0 7 0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

ORDINARY GLAZING QUALITY (O.Q.) AND SELECTED GLAZING QUALITY (S.Q.).

PER FOOT SUPER.

In sizes not exceeding 80 in. long or 48 in. wide or 110 united inches.

	O.Q.	S.Q.
18 oz. in 300 ft. cases	2½d.	2¾d.
24 oz. ,, 200 ft. ,,	3½d.	4d.
26 oz. ,, 200 ft. ,,	3¾d.	4¼d.
32 oz. ,, 200 ft. ,,	5¼d.	6¼d.
24 oz. ,, 300 ft. ,,	3¾d.	4¼d.
26 oz. ,, 300 ft. ,,	3¾d.	4¼d.
32 oz. ,, 300 ft. ,,	5¼d.	6¼d.
18 oz. Obscured Sheet		3¼d.
24 oz. Obscured Sheet		4¼d.
Fluted, 21 oz.		9d.
Enamelled, 18 oz.		5½d.
,, 24 oz.		6¾d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE AND FIGURED CATHEDRAL, ETC., IN CUT SIZES.

	Per ft.
Rolled plate, ¼ in.	5¾d.
Rough cast double rolled, ⅜ in.	6¾d.
Rough cast double rolled, ½ in.	6¾d.
Figured rolled, and Cathedral, white	6¾d.
Figured rolled and Cathedral, tinted	9½d.
Rolled Sheet	6d.
Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ¼ in. thick	0 10½

Rolled plate is the same price as rough cast double rolled.

	Per ft. s. d.
Wire Rolled, ¼ in. thick	0 9½
Wired Cast, ¼ in. thick	0 9½
Georgian Wired Cast	0 10
"Calorex" Sheet, 21 oz.	2 6
,, ,, 32 oz.	4 0
,, Cast, ¼ in. thick	0 10
,, ,, ⅜ in. thick	1 0
,, ,, ½ in. thick	1 2
Non Actinic Glass, ¼ in. thick	0 9½
,, ,, ,, ⅜ in. thick	1 0
,, ,, ,, ½ in. thick	1 2

"VITA" GLASS.

	s. d.
Clearsheet—not exceeding 1 foot	1 3
,, 2 feet	1 6
,, over 2 feet	2 0
Polished plate not exceeding 1 foot	1 6
,, ,, 2 feet	3 0
Cathedral—not exceeding 1 foot	1 3
,, exceeding 1 foot	1 9
3/16 in. Wired Georgian Design. Sizes up to 96 inches long by up to 24 inches wide	3 0

LEAD, &c.

(Delivered in London.)	Per ton. £ s. d.
LEAD.—Sheet, English, 4 lb. and up	34 10 0
Pipe in coils	34 0 0
Soil pipe	39 10 0
Compo pipe	41 5 0

NOTE.—Country delivery, 20/- per ton extra, lots under 3 cwt. 4/- per cwt. extra and over 3 cwt. and under 5 cwt., 2/6 per cwt. extra. Cut to sizes, 4/- per cwt. extra.

Old lead, ex London area, at Mills ..... per ton £21 10 0

BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. from February 1. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification	A	A^1	A^2	A^3	B	B^1
Craftsmen	1/9½	1/9	1/8½	1/8	1/7½	1/7
Labourers	1/4½	1/4	1/3½	1/3½	1/2¾	1/2½

Aberdeen	A	Dumfriesshire	A^2	Inverness	*	Perthshire	A^2
Ayrshire	A	Dundee	A	Inverurie	A^1	Peterhead	A^1
Banff	B	Dunoon	A	Kincardineshire	A^2	Renfrewshire	A
Berwickshire	A^2	East Fife	A	Kinross-shire	A	Rothesay	A
Bridge of Allan	A	East Lothian	A	Lanarkshire	A	Roxburghshire	A^2
Broughty Ferry	A	Edinburgh	A	Midlothian	A	St. Andrews	A
Clackmannanshire	A	Fifeshire	A	Monifieth	A	Selkirkshire	A^2
Doune	A	Forfarshire	A^2	Moray and Nairn	B	Stewartry	A^2
Dunblane	A	Glasgow	A	Newport	A	Stirlingshire	A
Dumbartonshire	A	Greenock	A	Peeblesshire	A^2	Stornoway	A^2
Dumfries	A^1	Hamilton	A	Perth	A	Tayport	A
						West Lothian	A

* This town has its own rates: Masons, 1/7½; Carpenters, 1/7½; Slaters, 1/7½; Plumbers, 1/8; Plasterers, 1/8½, but 1/9 is paid owing to the scarcity at present; Painters, 1/7½ and Labourers, 1/3.

The information given in this table is copyright. Rates of wages in England and Wales are given on page 798

THE SCOTTISH BUILDER

NEW BUILDINGS

DUNDEE.—BUILDINGS.—Plans and sections submitted to the T.C. : Camphill-rd., additions to lodge, for Alex. G. Goudie (architects, Maclaren, Soutar & Salmond, 15, South Tay-st.); Constable-st., first aid and cleansing post for Baxter Bros., Ltd. (architects, Maclaren, Soutar & Salmond); Hillbank-rd., warehouse for Jas. Scott & Sons, Ltd. (architects, Thoms & Wilkie, 21 South Tay-st.); Murraygate, alterations for Montague Burton, Ltd.

DUNFERMLINE.—HOUSING.—The Dean of Guild Court has granted permission to the Scottish Special Housing Association to build 372 houses at Brucefield. The scheme will involve an expenditure of about £130,000.

GLASGOW.—BUILDING.—The Corporation has received M.H. sanction to construct the bridge and road widening at Hillington-road, for which Government grants of 75 and 50 per cent.—£13,538 and £10,620—toward the cost will be given.—Plans have been prepared by Messrs. Wylie, Shanks and Wylie, architects, 204, West Regent-street, Blythswood, for reconstruction and alterations for Messrs. Wylie and Lochhead, Ltd., Buchanan-street, at Berkley-street. — Plans prepared by Messrs. John Keppie and Henderson, architects, 187, West Regent-street, Blythswood, for extension to the premises of Messrs. W. and J. Lewis, Ltd., Paton-street, Lower Dennistoun, at Haghill depot.—Plans prepared by Mr. W. MacNab, housing architect, 20, Trongate, Glasgow Cross, for 18 houses, etc., in Bedley-street.

LANARKSHIRE.—Plans to be prepared by Mr. S. MacColl, County Housing Architect, Hamilton, for 16 houses at Carnwath and 12 houses at Law.

LARBERT.— PREMISES.— Plans prepared for new storage building, garage and other offices at Foundry Lane, for Messrs. J. and W. Thomson, for which the architects are Messrs. P. M. Copland and Blackie, 76, Tighstreet, Falkirk.

PLEANS.—ADDITIONS.—Plans prepared for reconstruction and additions to the Pleans Miners' Welfare Association public halls, etc., for which the architects are Messrs. Cowie and Miller, 45, Cleland-road, Motherwell, Wishaw.

NEW CINEMA

BLYTH.—Plans have been approved for the erection of a cinema for Mr. Sheckman, of the Hippodrome. The work will be carried out by direct labour, and the scheme has been designed by Mr. E. M. Lawson, F.R.I.B.A., Barras Buildings, Barras Bridge, Newcastle.

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SLIDING DOOR GEAR
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TENDERS

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Items should reach 4, Catherine-street, Aldwych, W.C.2, not later than Wednesday morning.

Tenders for A.R.P. work will be found under "A.R.P. Schemes."

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Ashton-under-Lyne.—Structural alterations and improvements to "Red Lion" hotel, Stamford-st., for Gartsides Brookside Brewery Co., Ltd., Brookside Brewery. A. Buckley, resident architect: Contractor, *C. E. Cordingley, Ashton-under-Lyne; brickwork, *Shuttleworth Bros, Stalybridge; plumber and sanitary engineer, *L. Schofield, Ashton-under-Lyne; plasterer, *F. Swindells, 66, Knott-la., Ashton-under-Lyne.

Batley.—Works for T.C.: Internal painting of public library, *C. P. Greenwood, Batley; heating installations, Church of England church and Nonconformist chapel at cemetery, *Walshaw & Wood, Batley.

Battersea.—Repainting steel chimneys, etc., of 12, 13, 15, 16 and 17 boilers at electricity generating station, for B.C.: *B.S., £424 16s. 6d.

Birmingham.—Switch-houses Nos 1 and 2 at Hams Hall electric power station, Lea Marston, for T.C. L. G. Mouchel & Partners, consulting engineers, 15, Victoria-st.: *Sir Robert McAlpine & Sons, Ltd., Dorchester Hotel, Park-la., London, W.1.

Bristol.—Repairs to 19, 20, 21, 22 and 41, Edward-st. for T.C. *M. & R. Brain, £979.

Bromley.—Decorations and repairs to Council houses, for T.C.: *H. Ludlow, Bromley.

Bromsgrove.—Sewerage scheme for West Heath area, for R.D.C.: *Housing Ltd., Station-st., Blackheath, Birmingham.

Burton-on-Trent.—Control room with accommodation for 16 telephone operators at fire station, for T.C. G. Moncur, B.S.: *A. Holmes & Son, Dallow Bridge-wks., Burton-on-Trent, £420.

Burton-on-Trent.—Additions to tyre factory, Stretton, for Pirelli, Ltd., Derby-rd. Plans prepared by own staff under the supervision of H. Summersgill, Chief Engineer: *T. Lowe & Sons, Ltd., Curzon-st., Burton-on-Trent.

Caernarvon.—Repairs to houses at Pendalar, on Ysgubor Goch housing estate, for T.C.: *Jones Bros., £111 5s. 8d.

Cheadle.—New building scheme, including new dining hall and chapel and additional nurses' bedrooms at Barnes Convalescent Hospital, for Board of Management of Manchester Royal Infirmary. T. Worthington & Sons, FF.R.I.B.A., architects, 178, Oxford-rd., Chorlton-on-Medlock, Manchester: Demolition contractors,* L. Brown & Sons, Ltd., Wilmslow, near Manchester. (Cost, £6,000.)

Coventry.—Roads and sewers, housing site between Canley and Tilehill, for T.C. E. H. Ford, City Engineer: *Works Dept. (Cost, £88,000.)

Coventry.—Extensions at sub-station, for T.C.: *T. Bates & Son, Ltd., £297.

Eastbourne.—Alterations to Cavendish school, for T.C.: *Mark Hookham, £448 10s.

Gateshead.—Alterations at The Crescent and 8, Park-terr., for T.C.: *Direct Labour, £460.

Glasgow.—Additions, Springburn works, Petershill-rd., for W. Bairdron & Co., Ltd., Parkhead Ironworks: Steel construction, *Redpath, Brown & Co., Ltd., Glasgow.

Glasgow.—Reconstruction and additions at works, for Steel Company of Scotland, 37, Renfield-st.: *Colville's Contracting Works, Ltd., Glengarnock.

Glasgow.—Works for Corporation. T. Somers, architect: Painting work at Municipal Buildings, George-sq., *Cosmos Decorators (Cosmos Studios), Ltd., Glasgow, £1,217 9s. 1d.; works in connection with new Larkfield motor transport garage (A. Findlay, architect, Transport Offices, Bath-st.), *Heeman & Frode, Ltd., *MacFarlane Engineering Co., Ltd., *Stewarts & Lloyds, Ltd., *North British Lift and Engineering Co., Ltd., *Dorman, Long & Co., Ltd., Middlesbrough, *D. Smith & Co., Ltd., Glasgow; storage building at Southern General Hospital (T. Somers, architect): Excavation, brick and mason, *J. Graham & Co., Ltd., Glasgow.

Grantham.—18 houses, Cherry Orchard site, for T.C. P. A. Benn, F.S.I., B.E.: †Rudd & Son, Ltd., Wharf-rd., Grantham, £10,090.

Greenwich.—Works for B.C.: Demolition of Cherry Orchard house and stables: ‡B.E. and S., £450; redecorative works at Chevening-rd. welfare centre: ‡B.E. and S., £107.

Haslingden.—Internal decoration, Greenfield massage centre, for Lancs P.A.C.: *A. Lord & Sons, Rochdale, £165.

Hendon.—Removal of tram track, Edgware-rd., between Oxgate-gdns. and Greenway-gdns., and making good road surface, for T.C.: *John Mowlem & Co., £6,103 6s. 8d.

Hinckley.—Factory extension, for C. Simpson & Co., Ltd., Rugby-rd. E. H. Crump, F.S.I., architect, Central-chams., George-st.: §Greaves Bros., Mount-rd., Hinckley.

Hinckley.—Factory extension, for Hood & Mason, Ltd., New-rd. Heaton & Walker, architects, Barclays Bank-chams.: *A. Russell & Sons, Ltd., Albert-rd., Hinckley.

Hyde.—Structural alterations and improvement to "Talbot" hotel, Commercial-st., for Gartside's Brookside Brewery, Ltd., Brookside Brewery, Ashton-under-Lyne. A. Buckley, resident architect: *W. Rose & Son, Rochdale-rd., Oldham.

Lancaster.—Extension to works at St. Leonard-gate, for Waring & Gillow (1932), Ltd., North-rd. C. E. Pearson & Son, architects, 2, Dalton-sq.: Excavations and masonry, *A. O. Thoms, Lancaster; carpenter and joiner, *Waring & Gillow (1932), Ltd., Lancaster; steelwork, *Banister, Walton & Co., Ltd., Trafford Park, Manchester; roofing, *Northern Asphalt and Roofing Works, Ltd., Leeds, 6.

Leicester.—Rebuilding yarn stores for Trafford Hosiery Co., Ltd., Leicester, after fire, Cowdell & Bryan, F.R.I.B.A., architects: *G. Calverley & Sons, 1, Northampton-st., Leicester.

DON'T TENDER UNSUCCESSFULLY

SECURE CONTRACTS WITH

THE STEEL SCAFFOLDING CO., LTD.

"BIG BEN TOWERS." 23, OATLANDS DRIVE. WEYBRIDGE, SURREY. 'Phone: Walton 614 and 615.

Letchworth.—A.R.P. report and control headquarters, for U.D.C. L. L. Brown, architect, Garve, Croft-la.:—

David Nott, Luton	£1,889
M. J. Gleeson, Ltd., North Cheam	1,865
A. E. Bird, Letchworth	1,850
John Ray, Ltd., Letchworth ...	1,810
Welwyn Builders, Ltd., Welwyn Garden City	1,575
Cox's Estate, Ltd., Letchworth ...	1,358
Whyatt (Builders), Ltd., Balham	1,324
E. Pollard & Co., Ltd., Clerkenwell	1,292
Baxter & Worboys, Ltd., Stotfold	1,250
*G. H. Kempster, Ltd., Watford ...	1,221

¶London (Air Ministry).—Works contracts placed for week ended June 15:—

Civil engineering work: B. Sunley & Co., Ltd., London; Geo. Wimpey & Co., Ltd., London; Howard Farrow, Ltd., London; T. H. Kingerlee & Sons, Ltd., Oxford; J. Chapman & Sons, Ltd., Leicester; W. & C. French, Ltd., Buckhurst Hill; M. J. Gleeson, Ltd., North Cheam; Thos. Lowe & Sons, Ltd., London; MacDonald, Gibbs & Co. (Eng.), Ltd., London; and Constable, Hart & Co., Ltd., London.

Building work: Wm. Townson & Sons, Ltd., Bolton; W. J. Simms, Sons & Cooke, Ltd., Sherwood, Nottingham; C. Miskin & Sons, Ltd., St. Albans; and J. Gerrard & Sons, Ltd., Manchester.

Structural steelwork: Glasgow Steel Roofing Co., Ltd., Glasgow; and Herbertson & Co., Ltd., Wolverhampton.

Heating work: Brightside Foundry and Eng. Co., Ltd., Birmingham; and G. N. Haden & Sons, Ltd., London.

General maintenance work: M. & F. O. Foster & Co., Ltd., Hitchin; Prestige & Co., Ltd., London; Atherton Bros. (Blackpool), Ltd., Blackpool; Chas. Lamburn, Ltd., Dry Sandford, Berks; and D. C. Stewart, Aberdeen.

¶ London (H.M.O.W.).—Tenders accepted for week ended June 14:—

Building work: Benfield & Loxley, Ltd., 106, Bullingdon-rd., Oxford; L. H. Samuel, Landore-yd., Neath-rd., Swansea; and Greenwood (Mansfield), Ltd., Wood-st., Mansfield.

¶London (War Dept.).—Contracts placed for week ended June 8:—

Nottinghamshire: building work, Adam Eastwood & Sons, Ltd., Burns-la., Warsop.

Yorkshire: Hutting, Sawdon Bros., Carlton-rd., Filey.

Yorkshire: Miscellaneous work, G. Dougill & Sons, Ltd., Chesnut-st., Darlington.

Yorkshire: Building work, J. Newsome Walker, Ltd., The Green, Horsforth, near Leeds; and Thos. Feather & Co., Ltd., 14, Highfield-rd., Six Lane Ends, Bradford.

Hampshire: Road work, S. Foster Deacon, South Devon-chams., Millbay Station, Plymouth.

Hampshire: Constructional work, W. G. Northcott & Co., Ltd., Beacon View, Whipton, Exeter.

Dorset: Road work, S. Foster Deacon, South Devon-chams., Millbay Station, Plymouth.

Dorset: Miscellaneous work, S. F. Rees, Ltd., 39, Victoria-st., Westminster, S.W.

Sussex: Hutting, J. Thorn & Sons, Ltd., Brampton-road, Bexley Heath.

Essex: Hutting, Ernest Knifton, Ltd., Langhedge-la., Edmonton.

Berkshire: Miscellaneous work, Spear & King, Ltd., 23, High-st, Camberley.

Hampshire: Building work, E. & L. Berg, Ltd., Hinchley Wood, Esher.

Co. Antrim: Electrical installation work, Aberdare Cables, Ltd., Aberdare, Glamorgan.

Nottinghamshire: Heating installation work, Richard Crittall & Co., Ltd., Bush House, London, W.C.2.

Kent: Miscellaneous works, Grummant Bros., 107, and 109, Grange-rd., Ramsgate.

Sussex: Hutments, Wilson Lovatt & Sons, Ltd., Clarence-st., Wolverhampton.

Pembrokeshire: Building work, J. M. Evans, Blue-st., Carmarthen.

Sussex: Hutments, C. F. Kearley, Ltd., 31, Davies-st., Berkeley-sq., London, W.1.

Manchester.—Shop, showrooms and warehouse, 22 and 22a, King-st., and 13, South King-st., for Jaeger, Ltd., 30, King-st. E. Bower Norris & F. M. Reynolds, FF.R.I.B.A., architects, 9, Albert-sq. : *T. Campion & Son, Devonshire-st., Ardwick, Manchester.

Montgomeryshire.—Central heating at Dernol, Llangurig, Oakley Park, Trefeglwys, Llawryglyn, Clatter, Cemmaes schools, for E.C. H. Wyn Jones, Director of Education, Newtown. H. Carr, F.R.I.B.A., architect : *G. Dawson & Son, Ceragul-st., Salford, £917. Alterations to cloakrooms at various schools : Cemmaes and Clatter council schools, *D. Wigley, Llanbrynmair, £116 10s.; Llawryglyn, Trefeglwys, Llangurig, Oakley Park council schools, *N. Meredith, Llanidloes, £168 12s.

Morpeth.—Office at slaughterhouse for T.C. : *R. Carse & Sons, Morpeth.

Newcastle-on-Tyne.—Additions to garage, Ouse-st., for Ranken & Sons : *Alnwick Construction Co., Ltd., Alnwick.

Newcastle-upon-Tyne.—Alterations and improvements at Grand Hotel. S. A. Lawson, architect, Emerson-chams. : *J. & W. Lowry, Corporation-st., Newcastle.

Oldham. — Structural alterations at "Monkey" p.-h., Gas-st., for Gartsides Brookside Brewery Co., Ltd., Brookside Brewery, Ashton-under-Lyne. A. Buckley, resident architect : Contractors, *A. Hoggins, Ltd., 2a, St. John's-st., Werneth; plasterer, *E. Pearce, 30, Harmony-st. (both of Oldham).

Preston.—External painting of 265 houses, Slack; 420, Ribbleton; 54, Miller-rd.; 63, Swansea; 22, Fishwick-parade; and 104, Inkerman-st. housing estates, for T.C. R. Williams, B.S. : *Borough Surveyor's Dept., £3,397.

Preston.—Structural alterations and new lavatory accommodation to "Red Lion" hotel (commercial), 13, Church-st., for Cornbrook Brewery Co., Ltd., Chester-rd., Cornbrook, Manchester. Plans by S. Metcalfe, resident architect, Brewery's Head Offices : *L. Yates, Ltd., Pibble Bank-mills, Bow-la., Preston.

Runcorn.—Provision of temporary mortuary accommodation, for U.D.C. A. B. Cunningham, S. : *Robinson & Simmons, Lambsicklela., Weston, Runcorn, £269.

Scarborough.—Painting for T.C. : 175 houses, Edgehill Park estate, *J. Carr & Son, Scarborough, £576; 168 houses, Northstead estate, *W. C. Smith, Scarborough, £483; 154 houses, Barrowcliff estate, *E. Bradley, Scarborough, £410.

Sedgley.—Bakehouse, Redhall-rd., for J. R. Cartwright : *A. E. Marsh, Musk-la., Lower Gornal, near Dudley.

Sheffield.—Structural alterations to premises, Pitsmoor-rd., for Wilson, Tupholme, Ltd., 290, Pitsmoor-rd. W. G. Gibbs, architect, 22, Paradise-sq. : *T. Ardern & Son, 80, Spitall-hill, Sheffield.

South Cambridgeshire.—Two houses, Hall-la., Great Chishill, and four houses, Heydon-rd., Great Chishill, for R.D.C. T. Stone, S., County Hall, Hobson-st., Cambridge. Turner, Robinson & Co., Ltd., Old Coulsdon, Hall-la., £1,283 3s., Heydon-rd., £1,503 14s.; F. Faircloth, Saffron Walden, Hall-la., £950, Heydon-rd., £1,770; *E. H. Manning, Cherryhinton, Cambridge, Hall-la., £760, Heydon-rd. £1,315.

Stockport.—Structural alterations to "Soldier Bick" inn, Furness Vale, for Gartsides Brookside Brewery Co., Ltd., Brookside Brewery, Ashton-under-Lyne. A. Buckley, resident architect : *G. Buxcey, Mellor Royd, Longhurst-la., Marple Bridge, Marple.

Sunderland.—Painting work, Mere Knolls cemetery, for T.C. : *Direct Labour, £150.

Sunderland.—Painting of schools for E.C. : *J. S. Grabham, Sunderland (Redby school interior and exterior), £364, and (St. Columba's C.E. school) £195. *Education Works Dept., Tatham-st. (Grange Park school) £256, (St. Mary's R.C. school) £220, and (St. Patrick's R.C. school) £206.

Swansea.—Works for C.B. : Switchgear ouse at Tir John Station : ‡By direct administration; painting two cottages at cottage homes. ‡Borough Architect, £111.

Uxbridge.—Emergency mortuary accommodation, for U.D.C. E. E. T. Bolton, E. and S.; G. Young (Floriston), Ltd., Greenford, £1,250; W. S. Try, Ltd., Uxbridge, £1,510; Fassnidge, Son & Norris, Ltd., Uxbridge, £1,598. (Accepted tender not stated.)

Ventnor.—External painting of town hall, for U.D.C. G. Poole, E. and S., St. John's House, Albert-st. : *J. Rousell & Sons, Victoria-st., Ventnor (I. of W.), £47 14s. 6d.

Warrington.—Extension to crane works area and bay in ropery dept., off Brierley-st., and drainage scheme to recreation pavilion off Chester-rd., for Whitecross Co., Ltd., Milner-st. : *Works Dept., Warrington.

Whiston.—Extensions and alterations to Public Assistance Institution, for Lancs P.A.C. S. Wilkinson, County Architect, Preston : *J. Lucas & Sons (Builders), Ltd., Eccleston-st., Prescot, £1,380.

Wolverhampton.—Extension of works at Great Hampton-st. Cleland & Hayward, architects, 36, Waterloo-rd. : *R. Hallett & Sons, Manby-st., Wolverhampton.

Wolverhampton.—Bridge over River Worfe, for T.C. : *Bierrum & Partners, Ltd., £346.

York.—Alterations, etc., to York Assembly Rooms, for T.C. Ward & Leckenby, architects, 9 Museum-st. : *W. Anelay, Ltd., 32, Coney-st., York, £4,500.

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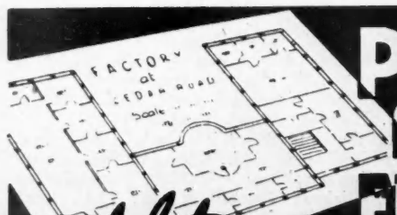
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